

State of
**INFORMATION
TECHNOLOGY**
in Missouri

2014

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State of Missouri - Office of Administration
Information Technology Services Division

Table of Contents

Letter from the Commissioner	1
Introduction	2

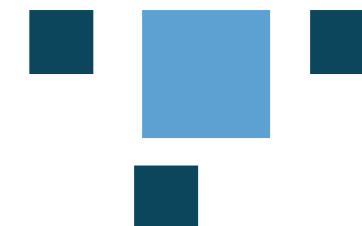
FUNCTIONAL AREAS

Enterprise-Wide Strategic Initiatives	3
Broadband	5
End User Support	7
Geographic Information Services	9
Information Security	9
Networks and Telecommunications	13
Project Management Oversight	15
State Data Center	17
Web Presence	19
Application Development	19

STATE AGENCY IMPLEMENTATION

Administration	20
Agriculture	23
Corrections	25
Economic Development	27
Elementary & Secondary Education	29
Health & Senior Services	32
Higher Education	34
Insurance, Financial Institutions & Professional Registration	36
Labor & Industrial Relations	38
Mental Health	40
Natural Resources	43
Public Safety	46
Revenue	48
Social Services	51

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DOUG NELSON



Commissioner

COMMISSIONER'S MESSAGE

TO THE GENERAL ASSEMBLY AND THE CITIZENS OF MISSOURI:

In the current age of internet connectivity, mobility and international economies, the expectations are that data and services be accessible from anywhere on any platform at any time.

It has therefore never been more imperative for us to continue to make investments in our technological infrastructure and equipment.

We have an obligation to protect our state networks and systems from attacks by identity thieves, hacktivists and state-sponsored cyber warriors. We must deploy and maintain the cutting-edge cyber security technology that will help us combat these inevitable attacks.

Our state legacy systems, many developed more than 20 years ago, are inhibiting our ability to transform government and leaving the state exposed to systems that will fail. We must continue to modernize these systems and replace them with more efficient and automated processes.

As the world around us continues to advance and the threats become increasingly more frequent and potentially detrimental, the status quo is simply not an option. We are making steady progress, but there is still much to be done to advance, strengthen and enhance our IT services. We must protect our most valued assets and remain competitive in an ever-changing world economy.

Sincerely,

Douglas E. Nelson
Commissioner of Administration

INTRODUCTION

This report, the 2014 State of Information Technology in Missouri, is provided by the Information Technology Services Division (ITSD), a part of the Office of Administration (OA).

ITSD provides direct IT support to nearly all of the state government agencies that are under the umbrella of Missouri's 14 IT-consolidated departments and works with those state agencies to answer Gov. Nixon's call for more effective and efficient government operations.

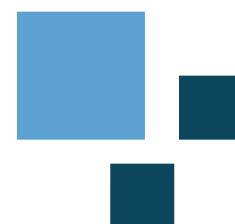
There are IT units outside consolidation that provide support for the Department of Transportation, Department of Conservation, certain elected officials, Missouri's Courts and Missouri's Legislature. These non-consolidated units provide valuable IT services to the State of Missouri, but have not been included in this report.

This report provides interested parties a snapshot of ITSD activity. The report includes an overview of each of ITSD's functional areas and each of the 14 web and application development teams that support the IT-consolidated departments. The report does not provide a complete discussion of any organization's technology systems, 2014 accomplishments or pending projects. That is beyond the scope of this document.

ENTERPRISE-WIDE STRATEGIC INITIATIVES

This report provides transparency on many of ITSD's projects and activities, a good number of which fall under the umbrella of ITSD's strategic initiatives for the enterprise. These initiatives include:

1. **Cybersecurity**
2. **Modernization**
3. **Mobility**
4. **Data**



ENTERPRISE-WIDE STRATEGIC INITIATIVES

Cybersecurity

Protecting state assets, networks, systems and data is a challenge for all states, and the threat to our Cybersecurity from cyber criminals, hacktivists and Advanced Persistent Threats (APTs, nation-sponsored hackers) is ever increasing. In fact, 2014 has been called by some experts "The Year of Data Breaches" because of the number of high profile incidents.

Hackers are not only using automated attacks against State of Missouri systems in an attempt to identify vulnerabilities that they can exploit, their use of social engineering and spear phishing is getting more and more sophisticated. This means that all state employees, not just IT experts, play an important part in defending against these very real threats.

ITSD received additional ongoing funding for Cybersecurity from the Governor and Legislature during the 2013 legislative session. These funds are being put to use by ITSD's team of Cybersecurity professionals as they enhance the State's Cybersecurity systems and train state employees in Cybersecurity best practices. ITSD continues to execute a 4-point strategic plan for Cybersecurity that:

- Creates a culture of Cybersecurity best practices;
- Deploys "best of breed" tools used by cyber professionals when defending state networks and systems;
- Ensures swift, effective response when Cybersecurity incidents occur; and
- Establishes the IT governance that bakes Cybersecurity into routine processes.

This plan improves the security posture across all Missouri state government, not just IT-

consolidated agencies, though they certainly enjoy more impact as Cybersecurity becomes central in state agency IT plans. However, risk will never be eliminated, it is mitigated. ITSD and state agencies must ensure the benefits of doing business online are not overshadowed by the risk that citizen privacy will be violated through a successful cyber attack.

Modernization

Modernization is a critical enterprise strategic initiative, and modernization projects are found in all state agency IT plans. These projects can be grouped into four categories:

1. Data Center Modernization / Private Cloud / Hybrid Cloud
2. Network Modernization / Unified Communications
3. Legacy System Modernization
4. Business Process Automation

The motivation to modernize is a result of trends that present both opportunities for change and threats to the status quo. A few opportunities presented by modernization include:

- Enhanced state agency program effectiveness through improved access to timely, accurate data
- Improved employee productivity via process automation
- Reduced long-term costs through virtualization
- Increased citizen access to online services and reduced processing times

Maintaining the status quo is often not an option as the world changes around us. Many of the state's legacy processes and technologies are not sustainable. First, manual processes, paper processes and dying technologies are becoming too expensive to support under today's economic

reality – budgets won't support them into the future. Second, and perhaps most importantly, the workforce supporting legacy technology is aging and retiring in great numbers. Counting on a new wave of workers to support those technologies is a dubious strategy.

Despite the progress described in this report, the state maintains too many legacy systems and too much outdated infrastructure. Many of these systems are neither effective nor efficient, are difficult to access and not sustainable in the long term. Investing in the modernization of those systems is a good opportunity for the state.

Mobility

The advent of the cloud, the proliferation of mobile devices and the maturation of mobile application ecosystems like Apple's App Store and Google's Play have forever changed our world. Mobile devices are now a part of life and citizens use them to do business; not just commercial business, but state business. In fact, more visitors to mo.gov now use mobile devices than traditional desktops when accessing our state web portal. That's a significant milestone – a tipping point of sorts. The world has changed and state government must respond - and respond quickly.

A three-pronged enterprise-wide strategic initiative is designed to ensure that MO state government responds to the changing world:

1. Optimize websites and online services for use on mobile devices via responsive design techniques
2. Deliver mobile applications for citizens when use cases dictate
3. Empower the state's mobile workforce by giving them high value mobile devices and applications that make them more effective and efficient

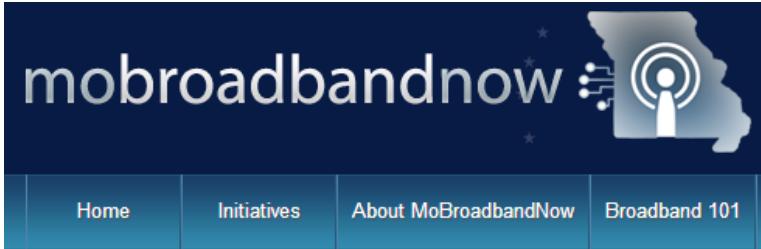
Projects like the mobile app for Missouri's job seekers help connect them with an employer and the mobile app for frontline staff in the Missouri Children's Division that helps them do their job are part of this initiative. Many more are on the way.

Data

The final enterprise-wide strategic initiative is designed to enhance Missouri's ability to treat its data as a valuable asset. The state is creating and capturing more data faster than ever before, yet the quality of that data and our ability to use it for the benefit of citizens can be improved. Data projects can be characterized as:

- Data Classification and Cataloguing – it is important to understand, protect, govern and share state data appropriately
- Master Data Management (MDM) – MDM projects can knock down silos and artificial barriers so that state agencies have a single view of their constituents and constituents have a single view of state government
- Data Analytics – whether examining the past or predicting the future, employing data analytics make state agencies more effective by improving outcomes and reducing fraud
- Open Data – publishing open data increases transparency and has the potential to increase economic opportunity

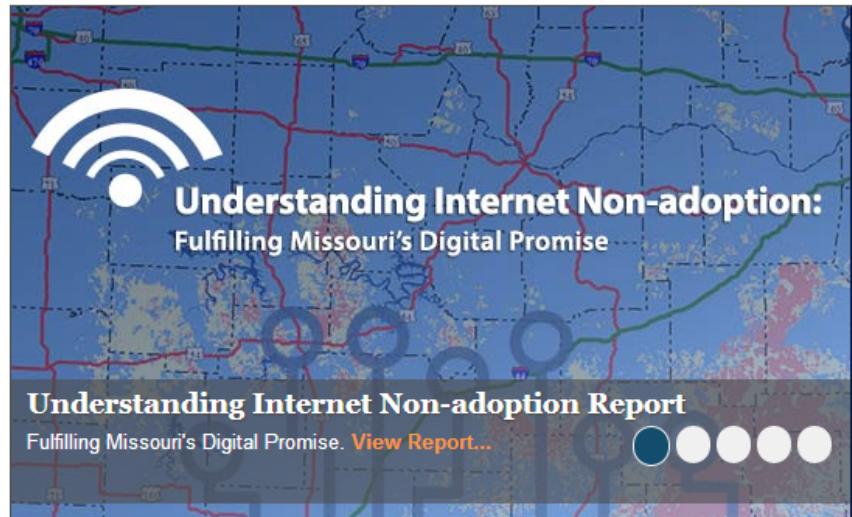
The Department of Health & Human Services' Health Homes project and the Department of Natural Resource's Environmental and Regulatory Master Data Management (MDM) project are examples of how state agencies are working to better leverage their data.



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MOBROADBAND NOW

MoBroadbandNow (MBBN) has seven core objectives including:

1. *Collecting and verifying data and information*
2. *Preparing comprehensive state and regional broadband maps*
3. *Establishing regional technology planning teams*
4. *Building new and leveraging existing relationships with broadband stakeholders*
5. *Providing technical assistance*
6. *Tracking the progress of infrastructure projects and providing transparency*
7. *Convening public forums and community outreach*

Established in 2009 by Governor Jay Nixon as a public-private initiative to expand and enhance broadband accessibility and adoption throughout the state, MOBroadbandNow's first effort was partnering with data providers to identify underserved and unserved communities in the state. Through a competitive award process, funding was secured to design and build 19 new broadband infrastructure projects. Missouri providers were awarded \$261 million under the American Recovery and Reinvestment Act (ARRA) of 2009. The total value of these projects, including additional private cash and in-kind support, is \$320 million. Missourians have already begun reaping the benefits of improved high-speed service, and more citizens will see faster, reliable connections in the future.

MBBN is playing a critical role beyond the ARRA-awarded projects. Strategic partnerships have been developed to launch new pilot projects, strengthening Missouri's global competitiveness. The fifth and final year of the broadband initiative was 2014.

Progress

Accessibility Goal Reached

In 2009, Governor Nixon set an ambitious goal that at least 95 percent of all Missourians would have access to broadband connectivity by the end of 2014. The National Telecommunications and Information Administration certified in June 2013 that 97 percent of all Missourians, including 92 percent of rural Missourians have access to broadband connectivity. The goal was exceeded ahead of schedule. As of October 1, 2014, Missouri had 99 percent accessibility based on population.

Project Completion

MoBroadbandNow partner providers have completed infrastructure construction, adding over 9,000 new fiber miles and 65 fixed wireless towers. These projects have connected more homes and businesses with high-speed broadband. Projects completed in 2014 include: Grand River Mutual Telephone.

Rural Health Broadband Initiative

The Rural Health Broadband Initiative supports rural health systems and their communities with technical assistance. Healthcare professionals and providers need access to broadband to offer telemedicine services, electronic health record management, patient registration and data collection, digital imaging and transmission, professional development and training along with other applications through online resources.

The initiative is collaborating with 15 rural hospitals with 50 patient beds or less, collecting data and information on broadband connectivity and usage to the main institutional building and its remote health clinics as well as with independent medical professionals. In addition, MoBroadbandNow partnered with Microsoft and its global health and life sciences division to assist rural health in better technology usage and access. The project was completed in July 2014 with all participating hospitals submitting critical usage information over 18 months on how its health care professionals and patients were taking advantage of specialized medical treatment, distance wellness consultations and health referrals.

In 2014, MBBN:

- Published Phases 1 and 2 feasibility reports on broadband connectivity to Missouri's public school buildings. Phase 1 examined broadband requirements for external connections to school buildings. Phase 2 examined broadband requirements for internal connections within school buildings. Feasibility studies were conducted in collaboration with Missouri Department of Elementary and Secondary Education and MOREnet. There are over 2,600 public school buildings in over 520 public school districts. Data collected demonstrates more than 700 school buildings do not meet minimum broadband standards for the 2017-2018 academic year.
- Partnered with Kansas City Digital Drive on Citywide Gigabit Summit in July 2014. MoBroadbandNow is collaborating with broadband stakeholders for Multistate Gigabit Summit in January 2015.
- Assisted regional broadband planning teams with data collection and technical assistance for Connect America Fund, Rural Broadband Expression of Interest submissions.
- Completed Rounds 9 and 10 of statewide and regional broadband data mapping including accessibility, speed and provider availability.
- Partnered with 126 identified Internet Service Providers (ISPs) in Missouri to identify and resolve broadband inaccessibility.
- Collected two quarterly quantitative usage reports and case studies on broadband and telemedicine.
- Completed second round of data collection in Kansas City metropolitan area on the deployment of ultra-high-speed (1 gigabit) broadband and competitive pricing.

END USER SUPPORT

End user support is provided so that state employees can resume the normal course of their duties in the event of computer malfunctions, lost passwords and other abnormalities. End user support is also provided when technical assistance is needed during special events like presentations and conferences. ITSD's End User Support team (ITSD-EUS) provides a wide range of IT assistance to employees of consolidated agencies within state government and some public entities that are affiliated with these agencies. State employees can make an IT support request by utilizing the online "help desk" ticket system or calling the Tier I call center. Problems are resolved by Level I and Level II technicians.

Critical services performed by ITSD-EUS include:

Device Management

The routine needs of over 40,000 traditional desktops must be managed by pushing out Windows updates, virus definition files and software to computers throughout the state. In addition, iOS devices like iPhones and iPads are managed to maintain the integrity of the state's data and network.

Level I Helpdesk

The Level I helpdesk staff provide prompt response and troubleshooting often in cooperation with the end user via phone. Level I support staff are able to employ remote access support tools to increase productivity and provide training to the customer. Level I technicians are trained to escalate issues that cannot be resolved quickly to the Level II support team.

Level II Helpdesk

In all instances, Level II staff will attempt to resolve issues remotely, maximizing work productivity. However, Level II field staff, located throughout Missouri, must often be physically present with the customer to provide effective service.

E-Waste Disposal

ITSD-EUS coordinates the disposal of electronic waste to safeguard state data. This also allows the state to dispose of non-useable equipment in a safe, environmentally friendly manner.

Printer Management

Over 11,000 printers in use by state agencies are routinely managed and serviced by troubleshooting.

Accomplishments

Equipment Deployment

ITSD-EUS deployed over 4,900 desktop computers, 1,648 laptops, 250 iPads and 672 printers during the previous year. As part of the Department of Social Service's Missouri Eligibility Determination and Enrollment System (MEDES) project, EUS has deployed 151 high-speed document scanners at DSS/Family Support Division offices throughout the state. These scanners will be used to scan in all client documents and make them available to all DSS offices throughout the state. This will allow greater efficiencies for both the agency and the customer in determining eligibility for the Affordable Care Act (ACA).

Help Requests

ITSD-EUS completed 242,124 requests for help during the previous year.

Power Savings

ITSD-EUS helped the State meet the requirements of the State Energy Conservation Program created by Governor's Executive Order 09-18. The following energy consumption savings were made:

- Replaced 1900 CRT monitors with LCD monitors for a savings of \$2,568.80/year
- Over 4,000 older PCs were replaced with more energy efficient models for a savings of \$3,800.00/year
- Eliminated 1,500 PCs from service for a savings of \$2,673.00/year
- Through implementation of a Managed Print Services pilot and printer consolidation, 620 print devices have been eliminated for a savings of \$11,680.00/year

XP Migration Project

Microsoft discontinued support for Windows XP and MS Office 2003 on April 8, 2014. This posed a security risk to the state as future Windows XP or MS Office 2003 vulnerabilities would not be patched. ITSD replaced and/or upgraded all PCs on the State network to Windows 7 and all MS Office to MS Office 2007 or higher before April 8, 2014. Over the course of the project, which started in August 2013, ITSD deployed 9,000 new machines, upgraded 12,000 machines to Windows 7 and removed 1,500 PCs from service.

Benefits beyond the increased security include:

- Increased productivity due to new technology
- Process improvement and standardization for deployment, desktop management, configuration, etc.
- Cost avoidance by not having to pay large fees to Microsoft to continue to support Windows XP and MS Office 2003.

Projects

Managed Print Services

A Managed Print Services pilot is currently underway that allows ITSD to evaluate the outsourcing of print services (printers, printer support, printer supplies) to a vendor. ITSD could outsource some or all of its printer management duties to a vendor-partner if the pilot proves to be a success.

Technology Assessments

EUS is conducting technology assessments for agency sites. These assessments include a review of the desktop, printing, scanning and faxing environments. EUS meets with agency personnel to make recommendations on right-sizing the print environment to more efficiently serve agencies' business needs while reducing costs.

GEOGRAPHIC INFORMATION SERVICES

The Office of Geospatial Information (OGI) is responsible for coordination, guidance, leadership and planning the implementation of Missouri's statewide geospatial information technology. The office identifies, coordinates and guides strategic investments in geospatial information technology, data and service systems to ensure effective implementation and use of geospatial information by state government, local government and the public as an enterprise resource to maximize benefits for Missourians.

Critical services performed by OGI include:

Geographic Information Systems (GIS) and Software Support

OGI staff administers Enterprise GIS, maintaining several GIS servers and geospatial databases. Staff coordinates data acquisition with other state, federal and local agencies and geo-enable data through location services. They also perform quality control checks to ensure data accuracy and provide support to GIS software users.

Geospatial Technology Program Integration

OGI staff work with program managers to integrate geospatial technology into programs for the State of Missouri and create GIS projects that improve program effectiveness, including grant management, asset tracking and catastrophic disaster planning.

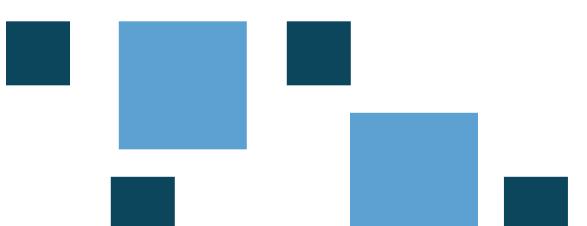
Mapping Applications

OGI staff is responsible for creating mapping applications like the Missouri Common Operating Picture, or MoCOP, used by emergency managers, Natural Resources Interactive Mapping Service, Women, Infants and Children (WIC) Stores and Clinic Locator, and the Flu Clinic Locator. In addition, staff creates products such as the Disaster Support Atlas, which provides emergency support map books for every county in the state of Missouri in a geo-enabled PDF format.

INFORMATION SECURITY

The Office of Cybersecurity (OCS) is responsible for managing all information security related events within the enterprise and ensuring proper administrative and technical controls are implemented to safeguard the State of Missouri's information systems. OCS promotes and provides expertise in information security management for all state agencies and supports national and local homeland information security efforts.

The Chief Information Security Officer (CISO) provides guidance and oversees information security efforts throughout state government. The CISO also manages the Office of Cybersecurity.



Critical services performed by OCS include:

Advanced Malware Detection

Malware has been and will continue to be one of the biggest threats to businesses and governments, including the State of Missouri. While there are many different levels of malware protection throughout the state's network, none of them sandbox and thoroughly inspect suspicious executables and office documents to determine behavior and intent. This technology is capable of detecting 'zero-day' malware and mitigating the risk of advanced persistent threats. OCS manages this service for the enterprise and it is one of the core tools of the Security Operations Center (SOC).

At any given moment, the advanced malware detection system is analyzing over 150 binaries and other files in separate sandboxes looking for indicators of compromise.

When zero day malware is detected, OCS sends the binary to 15 major AV companies so all may benefit from the intelligence gathered via the advanced malware detection system.

Awareness

In 2014, OCS administered online end user awareness training to state agency employees. The training contained prerecorded video modules and quizzes that pertained to a specific agency's business needs. Besides 23 Cyber Security awareness modules on topics like phishing, the training offered 18 compliance modules including HIPAA, Federal Tax, FERPA and others.

Awareness training was delivered to over 38,000 employees in a three month time period.

Data Loss Prevention (DLP)

To protect against accidental or malicious data loss, OCS manages and monitors a DLP system. The DLP system blocks classified data from leaving the network via the web.

Endpoint Forensics

OCS is one of the few entities in the state (public or private) with a computer forensics lab capable of recovering information from damaged or formatted storage devices and assisting with investigations involving computer hardware.

Internet Filtering

OCS manages the state's Internet filter. The Internet filter not only protects the state's systems and users from malicious websites, but also assists in reducing bandwidth consumption and increasing productivity.

During an average month:

- The Internet filtering system monitors over 750 million requests
- Over 6% of all Internet requests are blocked, saving the state gigabytes in bandwidth
- Over 2.5 million of the Internet requests blocked are security related

Intrusion Prevention

OCS oversees the management of the state's intrusion prevention system. The intrusion prevention system (IPS) stops known malicious attacks at the perimeter of the state's network. In 2014, OCS acquired a next generation IPS capable of having insight at the application level, geolocation of where the attacks are originating, and also stopping known malicious malware such as Trojans and viruses.

During an average month, the IPS blocks over six million attacks.

Network Access Control

Network Access Control (NAC) is a security solution that prevents unauthorized access to protected networks. It posture checks and vets electronic devices like desktop computers, laptops, tablets and smart phones for authorized access based on predefined policies and whitelists. NAC allows authorized devices access to the network and denies unauthorized devices access to the network. There are different levels of “denied,” such as placing the devices on a separate network with only Internet access. In 2013 and 2014, OCS expanded existing NAC deployment to cover the entire enterprise.

NAC continuously monitors and inventories over 30,000 devices on the network, blocking when the device does not meet predefined policies.

Network Forensics

In 2014, OCS acquired a solution that offers network forensics capabilities. OCS utilizes this solution on a proactive basis looking for indicators of compromise and on a reactive basis once an event occurs. Network forensics enables OCS to corroborate many of the findings coming from various event sources.

During each day, over 600 Mb/s of traffic is analyzed, parsed, and cross referenced against intelligence feeds from multiple vendors.

The amount of traffic equates to about 75,000 network sessions a minute.

Outreach

OCS communicates with state users and the general public using Twitter, Facebook, and by having its own website, cybersecurity.mo.gov. In 2014, OCS refreshed the look of cybersecurity.mo.gov and made it more mobile-friendly by using responsive design. Cybersecurity.mo.gov provides up-to-date information on the latest Cyber Security news and alerts and also provides the user vital tools to help them stay safe such as a secure password generator.

Cybersecurity.mo.gov has five online tools to help citizens makes themselves more secure

1. Phish checker
2. Password generator
3. User's IP address lookup
4. Domain to IP address lookup
5. MD5 hash generator

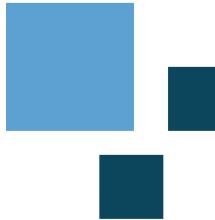
Security Architecture

OCS provides guidance in developing and maintaining the state's information security architecture and standards. Every year, the standards are reviewed and refreshed to ensure they're applicable and stay consistent with NIST. These standards are the enterprise reference for state information security.

Security Information and Event Management

Security Information and Event Management (SIEM) solutions aggregate logs from servers, firewalls, workstations, and other sources and then correlates the data into usable information. They provide a real-time view of the enterprise security landscape, alerting OCS of any concerns. The solution enables OCS to quickly track down the source of the attack by correlating thousands of firewall and workstation logs almost instantaneously and giving OCS a clear picture into the malicious event. OCS recently acquired a SIEM solution that has built inside the network forensics functionality previously mentioned.

Throughout the day, the SIEM receives over 250,000 events a minute.



Several General Assembly Members tour the State Data Center and Cyber Security facilities.

Security Operations Center

Due to the increased awareness of information security related events and insight into the network; OCS has started the process of creating a Security Operations Center (SOC). The SOC, as the name implies, is responsible for monitoring all information security operations within the enterprise. The SOC is also responsible for managing all information security related incidents for the enterprise, ensuring they are properly identified, analyzed, communicated, remediated, and reported.

Since the development of the SOC in early 2014, over 3,100 events have been investigated (about 80-100 per week).

Comparing event counts before we shifted focus to afterwards, OCS observed a 71.25% decline in malware events.

Vulnerability Management

OCS performs routine and ad-hoc vulnerability assessments against all networked assets; everything from mainframes to printers. OCS works closely with application developers to test soon-to-be released applications to ensure that the state's information remains safe. In 2014, vulnerability management capabilities were greatly increased as OCS automates assessments for many of the state agencies. After an assessment completes, staff are notified with a risk reduction plan that highlights top vulnerabilities and assets.

Assesses over 30,000 networked assets on a routine basis, internal and external.

Web Application Firewall

Web application firewalls (WAF) protect public websites and other web services from being attacked and compromised by cyber criminals. WAFs protect websites from common attacks such as cross site scripting and SQL injection but are also able to “virtually patch” vulnerable third party code such as a WordPress or Drupal. Some WAFs also have the capability to learn about acceptable website inputs (POST and GET requests) and block malicious requests that deviate from the safe norm. OCS in coordination with the State Data Center (SDC) deployed a WAF in early 2014 to protect highly visible web assets.

The WAF detects approximately two million potentially malicious events per month.

Accomplishments

Advanced Malware Protection Deployment

OCS deployed multiple controls during 2014 to protect state resources from web and email borne advanced malware and phishing attacks. Advanced malware and phishing attacks continue to be one of the most significant cyber threats to state government.

Data Loss Prevention (DLP) Deployment

To further protect against accidental and malicious data loss, DLP controls were implemented. These controls, managed by a Data Loss Prevention (DLP) system, shall block data from leaving the network and/or notify the appropriate agency employee when Person Identifiable Information (PII) or other sensitive data is at risk of leaving the state's domain.

Denial of Service Mitigation

To mitigate denial of service attacks, ITSD has executed several strategic measures to ensure the continuity of Internet enabled services.

Intrusion Prevention System (IPS) Replacement

A Next-Generation IPS goes beyond traditional functionality and offers greater insight and correlation to activity on the network. This enhances security and makes it more difficult for advanced persistent threats (APTs) to cause problems.

Security Information and Event Management (SIEM) Replacement

A new best in class SIEM has improved security intelligence by correlating more logs from servers, firewalls, workstations and other sources than OCS' former solution. This gives ITSD greater insight into the threat landscape of the state network.

Web Application Firewall Deployment

ITSD's primary web application firewall was deployed in 2014. The web application firewall mitigates many threats against web based services by blocking complex attacks and through the use of virtual "patching".

NETWORKS AND TELECOMMUNICATIONS

The Networks and Telecommunications (ITSD-Networks) team is responsible for the communication infrastructure that provides essential support to state government agencies. Advancements by the team have enhanced business operations, making communications within state government and with Missouri citizens more efficient.

Critical services performed by ITSD-Networks include:

Capitol Campus Fiber Optic Network

The Capitol Campus fiber optic network connects major state office buildings in the downtown Jefferson City area, including the State Capitol, the Harry S. Truman Office Building, the Jefferson Office Building and the Kirkpatrick State Information Center.

Core Network

The core network functions as a central hub so locations around the state can access information on the state network. The core network spans from Jefferson City across statewide fiber to Springfield, Kansas City, and St. Louis. In order for state employees to function at maximum productivity, the highest levels of capacity and reliability are required for the core network.

Disaster Recovery Site Connectivity

Connectivity with the state's disaster recovery site (or secondary site), in Springfield, MO, must be reliable and of sufficient capacity to allow for the replication and synchronization of data located at that site and in the State Data Center (SDC).

Internet Services

Internet access is considered an essential service to state agencies. The team provides Internet access to approximately 50,000 users across all state agencies, as well as secured access to hundreds of state government web sites via the public Internet.

Jefferson City Metro Area Ethernet Network

The Jefferson City Metro Area Ethernet Network connects buildings throughout the Jefferson City area to the Capitol Campus fiber optic network and the State Data Center Network.

Outstate Network Connectivity

MPLS, Ethernet, and broadband connectivity are provided to end users at nearly 1,100 locations across the state.

State Data Center (SDC) Network

The network structure in and around the SDC allows state employees to access data and services that are used when performing their duties.

Unified Communications

UC integrates multiple communications services including:

- Instant Messaging – Presence
- Telepresence & Video Conferencing
- Voice over Internet Protocol (VoIP)
- Web & Audio Conferencing

This enables agencies to reduce travel, increase productivity, improve customer experience and save costs. There are roughly 17,000 VoIP customers throughout the state.

Wireless Local Area Network (LAN) Services (WiFi)

Wireless LAN (WiFi) connectivity is provided to an estimated 1,850 mobile devices on a daily basis. This is provided across the state on over 850 access points.

Accomplishments

Disaster Recovery (DR) Network Enhancements

The DR network was upgraded from a 1 GB capacity to a 10 GB capacity to support next generation applications and development. Automatic failover of Internet traffic from Jefferson City to SpringNet has been configured. Firewall capacity was added at the DR site to handle the redundancy of tunnels from Jefferson City to the DR site.

Network Security

The firewall infrastructure was enhanced in September 2014 to enhance the security of the state system while also adding much-needed capacity.

Network Modernization and Upgrades

Network bandwidth is a key enabler of customer business strategies. Increased investments in network bandwidth enable agencies to overcome existing bandwidth constraints and focus on their next generation applications such as Enterprise Content Management. The MoBroadbandNow middle-mile providers implemented high-speed connectivity to approximately 25 more state facilities in locations that include St. Louis, Cape Girardeau, Springfield, and Joplin. In addition to expanding bandwidth at these sites, the overall savings is over \$32,000 a month.

UC Expansion

The state UC support team is working to identify all remaining legacy lines in the state. This will result in substantial cleanup savings and lay the roadmap to convert sites over UC. Most recently 300 lines in Columbia and 300 lines in Cape Girardeau were converted to UC.

Department of Corrections (DOC) Network Refresh

ITSD completed a network refresh of sixteen DOC facilities around the state in 2014. There are roughly 350 routers and switches in the sixteen facilities. The new equipment will allow the facilities to run higher speeds across their LAN, implement power over Ethernet when needed, and reduce the number of outages experienced. Along with the network refresh, ITSD staff is removing unsupported legacy equipment, standardizing on network design, and removing vulnerable access points and devices.

DOLIR Call Center & Interactive Voice Response (IVR) Modernization

The Department of Labor & Industrial Relations (DOLIR) has upgraded their Call Center and IVR solutions to ensure sustainability of the system and save money in the long term. By leveraging voice trunks on a shared IVR and Call Center system DOLIR was able to eliminate an estimated \$25,344/month in PRI trunks. This platform will expand to include agencies such as DSS, DOR and DED.

Critical services performed by the PMO include:

Application Portfolio Management (APM)

ITSD's application portfolio is managed using the Innotas APM software-as-a-service (SaaS). APM gives ITSD and state agency stakeholders transparency into the application portfolio. This allows the state to leverage its current software assets and save money by sharing services and application code.

Missouri Adaptive Enterprise Architecture

The goal of statewide Missouri Adaptive Enterprise Architecture is to enhance coordination, simplify integration, build a consistent infrastructure, and generally facilitate efficiencies in the development of technology solutions. The intent of the Missouri Adaptive Enterprise Architecture program is to realize these goals while ensuring effective use of state resources, thus enabling consistent, effective delivery of services to the citizens, businesses and employees of Missouri.

PAQ Oversight

The primary responsibility of the PMO Office is oversight of all Project Assessment Quotes (PAQs) that allow the state to procure services from vendors on existing state contracts. This is intended to ensure that the state receives value from the work performed and that vendors are treated fairly.

Project Portfolio Management (PPM)

ITSD's project portfolio is managed using the Innotas PPM software-as-a-service (SaaS). PPM gives ITSD and state agency stakeholders transparency into project status, risks and timelines.

Tools & Templates Repository

The PMO Tools and Templates Repository is a collection of standardized documents and procedures used for project management.

These processes and templates support ways to improve business operations (i.e., reduce delivery costs and time):

- Early identification of project issues, budget, scope and risks
- Apply knowledge that is working for one agency and may help another
- Eliminate duplication of data and processes among project managers

This site is also the source of "best practices" that, together with PMO staff, serves as a knowledge-based center, providing expertise, support and training.

Accomplishments

Agile Project Methodology

Agile project management is being adopted by organizations worldwide to better address the realities of complex project environments. As the State integrates agile into the organization the PMO has taken an active role in evolving management and processes to leverage the latest agile methods and techniques.

- Developed an Agile PAQ framework to support iterative development
- Provided Agile training to over 50 employees
- Formed collaboration groups to identify best practices

Change Management

Project changes can consist of a range from minor changes to significant changes that can alter the project. A request can occur in a number of project areas including requests to expand or reduce the scope of the project, requests to modify policies, procedures, plans, or processes, requests to modify expenditures, and requests to update or modify

schedules. The PMO office has implemented a process to track and assess the types of changes, the root cause, and the impact to the organization.

Training, Mentoring & Collaboration

The PMO plays a major role in the development of a high-quality training strategy that includes a variety of professional development options and seeks to elevate the performance and communication skills of ITSD employees.

- Developed a BA User Group that meets monthly to collaborate and share ideas
- Provided senior level Project Management training opportunity
- Provided a 3 day Business Analyst training resulting in a Missouri BA Certification, at the conclusion of the class, participants will be given a certification "test" consisting of 100 questions to ensure comprehension of the information provided.
- Conduct quarterly organizational interactive webinars with Project Managers

PROJECT MANAGEMENT OVERSIGHT

The Project Management Oversight Office (PMO Office) provides guidance on development and maintenance of IT contracts and assists IT project managers on the performance of their duties when necessary. The PMO also assists and advises on various IT governance initiatives.

The PMO exists to:

- Institutionalize "best practices" identified within the organization as it builds governance processes for Portfolio Management, Project Management and other functions;
- Assist with integrating and aligning project management with business operations in order to support the organization in successfully accomplishing its mission;
- Mentor and coach project managers supporting the various agencies as needed; and
- Review Project Assessment Quotes (PAQ), Requests for Proposals (RFP), Requests for Information (RFI), Requests for Quotes (RFQ), and Invitations for Bid (IFB).

STATE DATA CENTER

The Missouri State Data Center (SDC) is the State's private cloud and provides a cost effective, uninterrupted hosting environment to support state IT needs.

Critical services performed by the SDC include:

Data Services

The Data Services group works with the application development teams and contractors to provide a cost effective, efficient and secure database environment for the State of Missouri and its citizens.

The Data Services group maintains over 7,100 databases across six different database management systems (SQL Server, DB2, Oracle, IDMS, MySQL and PostgreSQL) with a total size of over 76 terabytes (Tb) of data.

For the first time during our annual Disaster Recovery exercise, the SDC was successful in recovering distributed databases and applications to the DR bubble in SpringNet. Part of this exercise had our customers logon to verify and test their applications.

Mobility and Desktop Services

The Mobility and Desktop Services teams support a framework of services used to manage all desktops and mobile devices. These services include Mobile Device Management MDM, Software management and Virtual Desktops (VDI). Through the combined efforts of MDM and VDI the team enables a more mobile workforce.

- Over 2000 virtual desktop deployed
- Over 2400 Mobile devices managed
- Over 35,000 desktops/laptops managed
- Over 1900 software titles supported

Exchange, Active Directory and Account Management Support (EADS)

The EADS team works to reduce costs through consolidation and reduction of licensing, maintenance, hardware and software related to Microsoft Exchange, Active Directory (AD) and account management. Consolidation of account management functions allows for better security through standardized processes.

The EADS team:

- Manages over 1.1 million messages sent daily
- Ensures approximately 1 million SPAM and virus laden messages received per day for state agencies are blocked and secured
- Manages the email archive of over 40 Tb, with a growth of 1 Tb every six weeks

Network Operations Center (NOC)

NOC staff is responsible for monitoring state systems and infrastructure. The NOC facilitates incident management by alerting IT staff and key stakeholders when a disruption in service occurs. NOC staff track critical incidents and create remediation reports that assist with root cause analysis and incident tracking and reporting. The NOC staff manages over 750 incidents and/or after-hours calls monthly to assist agency users with IT issues.

Operating Systems Support

The State Data Center Systems Team is responsible for the server, VDI and storage infrastructures within the primary data center in Jefferson City, the secondary data center in Springfield and other locations. This group also maintains the backup and recovery of data, and the replication of that data to the state's secondary data center for disaster recovery purposes.

The Systems Team:

- Secures and optimizes 1,900+ virtual servers
- Deployed 225 new virtual servers since January of 2014
- Managed 200 Tb of storage growth since January of 2014
- Ensures 1700+ servers and approximately 25 Tb of data is backed up daily
- Manages over 550 remote servers across the state
- Secures and applies over 6,000 patches to over 2,100 servers monthly

Print Shop

The SDC print shop produces a variety of printable items such as checks and titles including:

- Approximately 1.9 million titles printed in 2013 (approximately 7,400 titles are printed nightly, five days a week)
- Approximately 1.7 million checks printed in the last year (approximately 5,357 checks are printed nightly, six days a week)

Websphere, Middleware and Application Server Support (WMASS)

The WMASS team provides a reliable and sustainable middleware environment that is used to deliver services to the State of Missouri. The use of middleware software applications allows the WMASS team to offer services that are capable of bringing applications and data together to present that information in an efficient manner to customers. The WMASS team supports end user computing services such as Web Services, Reporting Services, Collaboration Services and Electronic Document Management Services.

The WMASS team maintains Enterprise Architecture Standards to minimize the proliferation of silos of technology that increase long term costs and inhibit effectiveness.

The WMASS team provides a reliable and sustainable middleware environment that brings applications and data together. WMASS supports:

- Approximately 1,150 applications
- 4500 managed reporting services
- Over 1000 documents scanned managed daily



The Web team provides technical support and expertise to all agencies and maintains web portals that support the state as a whole. Web team members have skills in web design, user experience, CSS, JavaScript, PHP and open-source content management systems.

Critical services performed by the PMO include:

Consulting and Web Development

The Web team supports statewide web development by maintaining a centralized team of web professionals to consult on web design, development and mobility. This team provides templates and consults with other teams and government agencies on design, HTML5, CSS, jQuery, user experience, mobility, PHP, Codeigniter, Wordpress and Drupal. The team is available to consult all state agencies and performs educational outreach via the Digital Media Developers (DMD) group.

Video Production

The Web team produces professional quality videos, including the "MoGov Minute" for MO.gov, in addition to providing video services.

Web Portals

The Web team manages several state web portals including:

- MO.gov is the state's citizen portal that provides a single citizen-centric view of the state's web presence. In the past year, MO.gov received over 3 million visits and totaled over 9 million page views.
- The Missouri Business Portal, business.mo.gov, provides resources and information for starting and operating a business in Missouri.
- The Missouri Data Portal, data.mo.gov, is a data sharing platform available to state agencies when sharing public data. These enterprise portals make information and data from all state agencies more accessible.

APPLICATION DEVELOPMENT

Reports on application development for each of the consolidated executive departments follow in alphabetical order.

The Office of Administration (OA) provides guidance and assistance to state government entities through the implementation of Executive Office initiatives, the establishment of uniform procedures and rules, as well as providing services in a cost-effective manner.

OA Systems

OA system development and maintenance is performed by ITSD-OA programmers using the following technologies:

- Legacy Programming Technologies: COBOL, CA Gen
- Standard Programming Technologies: .NET, MS SQL

OA maintains 68 applications in its application portfolio. Below are descriptions of OA's most critical systems:

Accounting Systems (SAM II & MAP)

Statewide Advantage for Missouri (SAM II) is an accounting system that processes state transactions for purchases, payments and fixed assets reporting. It is also used to perform/project federal grant reporting and draw-downs. SAM II is also used to process state payroll and perform other HR tasks.

SAM II is now approaching its 17th year in production. It is a COBOL/Mainframe commercial-off-the-shelf system that has been customized for the State of Missouri and requires ITSD staff to ensure that the system is updated to comply with state and federal accounting rules and is functioning as intended. Some of the enhancements made to SAM II this year include tracking of budget restrictions put in place by the governor, adding functionality needed to comply with updated reporting requirements for Federal Highway Administration reimbursements and enhancements needed to meet requirements for the Affordable Care Act.

A SAM II data warehouse exists and is updated daily so other systems are able to query the large amounts of data in SAM II. The Missouri Accountability Portal (MAP) uses the data warehouse to present financial information to the public, allowing citizens to track how the state is spending taxpayers' money. The MAP site was enhanced this year to include information on federal grants, budget restrictions and public bonds.

In the past year, SAM II processed more than 96,000 purchase orders; processed more than 1,052,000 payment vouchers; printed over 410,000 payments to vendors by check; created over 592,100 direct deposit payments to vendors; processed more than 1.3 million payroll checks; and processed over 57,000 paychecks per pay period. Advices are now printed for an average 3.8 percent of direct deposits, down from an average of 23 percent two years ago, reducing printing costs.

Bidding System (OLB)

The Online Bid (OLB) system is a web-based statewide bid system used by agencies to solicit and receive bids and make awards. Vendors are also able to register as a state vendor and identify the commodities they provide.

Just over 8,850 vendors are registered to use the site; close to 3,050 new or updated registrations were received over the past year; 519 bids were posted and close to 1,900 bid responses were received.

The system, along with other small systems and paper-based processes, is a candidate for replacement with a modern eProcurement system when funding becomes available.

Budgeting System (BRASS)

BRASS is the system used to develop state agency budgets during the state's budgeting process every fiscal year.

Charitable Campaign System

The Missouri State Employees Charitable Campaign (MSECC) system is used by state staff to manage charity and donation data for the annual campaign.

Employee Performance Appraisals System (PERforM)

PERforM is a .NET system used by 6,776 state employees to create performance objectives, create annual performance appraisals and create special appraisals. In the past year 33,249 annual appraisals were created.

Employment and Personnel Systems (EASe, MAIRS & JOA)

The Electronic Application System (EASe), Management and Applicant Information Resource System (MAIRS) and Job Opportunity Announcement (JOA) software combine to support the Missouri Merit system.

The JOA system displays a listing of open merit registers. Merit System job applicants use EASe when applying to be added to a Merit register. EASe is a .NET application that collects pertinent employment information about an applicant and depending on the job class applied for, determines the applicant's rating of their education and experience based on their responses to a series of questions. MAIRS, together with EASe, is used to process Merit System applications, schedule and score tests, fill registers, create certificates and track dismissals.

MAIRS is based on the legacy CA Gen technology. MAIRS is a candidate for replacement by a modern system when resources become available.

Time and Attendance (ETA)

The Enterprise Timekeeping Application (ETA) has allowed the State to retire redundant electronic systems and eliminate some paper-based systems. It is used by state employees to code time to specific activities (projects) and track leave.

Vehicle Fleet Management Systems (FLEET & CARS)

FLEET tracks state vehicle information and CARS allows state employees to reserve a car for state use.

Workers' Compensation System (RESTORE)

RESTORE is the system used to track workers' compensation claims by state employees.

Accomplishments

Enterprise Timekeeping Application (ETA) Phase 2

Seven state agencies now use ETA. There are 3,188 active users, compared to 1000 last year. Three other timekeeping applications were retired thereby saving money.

Workers' Compensation System (RESTORE)

The Risk Enterprise System to RESTORE Employees (RESTORE), which manages workers compensation claims for employees of several state agencies and universities, was implemented on July 1, 2014. Created using the .Net platform, RESTORE replaced the Risk Management System that has been in use since 1993 and was based on block mode, green-screen technology that is now outdated.

RESTORE provides new and improved functionality in the areas of payments, claim subrogation and claim event documentation, streamlines federally required Medicare reporting, eliminates paper-based processing for claim forms and settlement negotiations, and enhances the ability to track trends and manage costs efficiently and effectively.

MO Docs

MO Docs is a .Net application that eliminated a paper process and significantly expedites the approval process. The MO Docs application has made available 5 electronic forms to 1249 users within the Office of Administration.



Projects

eProcurement

In order to achieve greater procurement efficiency and savings for taxpayers and stakeholders, the state is investing in a modern eProcurement system. Improving automation and technology will help eliminate complexities in the purchasing system and provide greater capabilities not only to the OA's Division of Purchasing and Materials Management (DPMM) but also to other state agencies, local government entities, and the vendor community.

Implementing a new eProcurement system will:

- Increase fiscal accountability and transparency.
- Modernize purchasing operations, streamline processes and cut costs
- Enable state agencies to search and find vendors more efficiently
- Provide improved access for suppliers and state agencies
- Improve access to business opportunities for small, women-and minority-owned businesses
- Provide greater access and better purchasing opportunities for local governments
- Reduce costs of goods and services. Increased supplier access to business opportunities increases competition and decreases prices

Implementation of the new system will begin in 2015.

Job Application System Phase I

An enterprise job posting system will be developed in .NET and used as a shared service for agencies wishing to participate. Agencies will be able to post job opportunities directly or utilize a web service.

Lease Management System

The system that allows FMDC to manage and maintain all the lease, lessor and lessee information for buildings, warehouses, etc. leased by the State of Missouri will be modernized from Mainframe/COBOL/CA GEN technology to .NET in order to ensure its sustainability into the future.

New applications will automate many processes therefore gaining efficiencies for FMDC. FMDC inspectors will be able to take advantage of the mobile piece when doing inspections in the field along with the additional GIS feature that will allow them to map out their locations and routes.

Legal Expense System

The system that allows OA General Services to track legal expenses due to legal claims being filed against the state will be modernized from Mainframe/COBOL/CA GEN technology to .NET in order to ensure its sustainability into the future.

New processes will allow for claim information to be entered online and attach any supporting documentation rather than mailing, faxing, or scanning/emailing in the forms. This will expedite the legal claim submittal and review process as well as allow for OA General Services to track the status of claims more efficiently.

Office of Equal Opportunity (OEO) Case Management System

This .NET application will replace a manual process. The OEO M/WBE Certification application will allow vendors to submit applications online to become certified by the State of Missouri as a minority and/or woman owned businesses.

The online application will navigate vendors through the application process using a wizard (much like turbo tax) to ensure they qualify, and based off those qualifications submitted, the certification application with required supporting documentation.

State Tax Commission (STC) Market Study

A new system is under development for use by the STC Sales and Ratio section and county assessment offices for analyzing property sales and statistics. The new system will integrate the functionality of separate, antiquated systems currently in use by each entity to ensure assessment functions across Missouri counties are fair and equitable and assist counties in maintaining compliance levels.

AGRICULTURE

The Missouri Department of Agriculture's (MDA) mission is to serve, promote and protect the agricultural producers, processors and consumers of Missouri's food, fuel and fiber products.

MDA Systems

MDA system development and maintenance is performed by ITSD-MDA programmers using the following technologies:

- Legacy Programming Technologies: AS/400
- Standard Programming Technologies: .NET, MS SQL

MDA maintains 49 applications in its application portfolio. Below are descriptions of MDA's most critical systems:



AgriMissouri System

The AgriMissouri system is used by Ag Business Development (ABD) to manage AgriMissouri memberships and business profiles of local food producers. The system exports business profiles to the AgriMissouri website where consumers can search for local foods and agritourism facilities. There were more than 2,200 members and 285 farmers' markets registered. The system uses PHP and PMS Access technologies.

FQLIMS (Fuel Quality - LIMS)

The Fuel Quality Program, part of the Weights and Measures Division, administers the fuel quality law through inspection, analysis and enforcement to help ensure consumers are purchasing quality motor fuels. Fuel samples are collected by field personnel and submitted for testing. The petroleum laboratory analyzes gasoline, kerosene, heating fuels, diesel fuels and alternative fuels including biodiesel and E85 fuel ethanol to make certain they meet state quality and safety standards. There are more than 9,037 samples obtained and tested through fuel quality inspections annually. FQLIMS is a Dbase system, with .NET and Microsoft Access components, that manages inspections and sample results.

MoPLANTS System

MoPlants serves several different programs for the Plant Industries Division. Among these is the Pesticide program that helps prevent adverse effects of pesticides on human health and the environment and licenses pesticide applicators and dealers. MoPlants has also streamlined the day to day activity for the Feed and Seed program that monitors the labeling on packages of feed and seed.

Petroleum Station Inspection System

This system maintains data on safety and device inspections of above ground storage tanks, service stations, refined fuels bulk storage facilities, marinas, airports, barge and pipeline terminals, bulk delivery trucks and other retail/wholesale locations. Currently, the Weights and Measures Division regulates more than 18,695 facilities of various types. This system uses Microsoft .NET technologies.

USA Herds

USA Herds is Commercial-Off-The-Shelf (COTS) software that allows the Animal Health Division to track livestock and poultry in Missouri to help ensure our food supply is safe. Components include veterinarians, premises reports, animal brands and livestock import/export. There are more than 24,462 premise reports and 6,995 animal brands in the system. Recent enhancements have included the ability to manage the licensing and inspection of Animal Care Facilities. There are more than 2,000 facilities licensed.

WinWam

WinWam allows Device and Commodity inspectors to capture field inspections electronically. Data from more than 7,000 inspections is entered into this system annually. This system uses Microsoft Access technology.

Accomplishments

Egg & Milk System

A new web-based system was deployed to manage the license, inspection and regulatory requirements of egg and milk producers regulated by the Weights, Measures, and Consumer Protection Division's Device and Commodity Inspection program. The system includes an online portal for licensee self-service. A mobile solution lets field staff work in remote settings and eliminates a paper form and US Mail process. This system has the capabilities of capturing more information that can be utilized for reporting and will reduce the office personnel's time during renewal as more licensees take advantage of paperless features of the system.

Fuel Quality Inspection System (FQLIMS)

The first phase of a web-based system for managing the inspection and regulatory requirements of pipeline and barge terminal facilities regulated by the Weights, Measures, and Consumer Protection Division's Petroleum/Propane/Anhydrous Ammonia program. This new application replaces an employee built and maintained database using antiquated Lotus Approach which was highly unstable. The project included the deployment of a mobile application for terminal inspectors that increases their productivity. The new database needs to be expanded to retail filling stations used by 20 field inspectors.

MoPLANTS

The MoPlants system is an implementation of the USAPlants Commercial-Off-The-Shelf (COTS) solution used by 7 states. Modules were implemented for the Feed, Seed, and Treated Timber, Pesticide and Nursery programs. The new system replaces legacy systems, eliminates inefficient manual and paper processes and introduces customer self-service functionality. Cost savings and productivity increases for staff will be found in future years as they increase the use of email notifications (potentially eliminating tens of thousands of mailings annually) and on-line payments from our clients, eliminating thousands of physical checks processed annually.

Online Forms

52 paper forms were converted to online forms with ePayment options for the convenience of constituents.

USAHerds Enhancement (Cats & Dogs)

Procured the USA Herds Commercial-Off-The-Shelf (COTS) module with customization in order to modernize and merge the Animal Care Program's with current Animal Health Programs for better customer support. The Animal Care Program enhancement includes a module to the existing

office solution to manage Animal Care Licensed Facilities and an offline module for field staff to perform inspections on Animal Care Facilities. This software application consolidation for the Animal Health programs under one software program is eliminating the need for support of numerous programs. Several states are utilizing the same software and when enhancements/upgrades/fixes are made, this is shared with all the states, reducing programming and support hours that would normally be charged to just one state. It has increased the efficiency of data entry and retrieval of that data, reduced paper and the need for mailings.

USALims

USALims is a laboratory information management system that replaced a legacy AS/400 system this year. The system now manages data related to specimens, accessions, test results, etc. It provides automated report generation, distribution and auditing. USALims also manages billing accounts and has an online portal that allows customers to have 24/7 access to their test results as well as submit lab requests. It has improved efficiency in several ways; one being the electronic distribution of lab results, as lab results are finalized the program automatically faxes or e-mails the results to the customer. This alone has resulted in approximately one hour per day reduction in staff time for that process.

Projects

Fiscal Reporting System

The new fiscal reporting system includes Electronic Content Management (ECM) and is projected to save MDA 20 hours per month.

Mo State Fair System Modernization

The State Fair exhibitor and entries management system is utilized year round for the annual fair event held in August. This system tracks the exhibitors and their entries on the fairgrounds and their payments for the classes they enter. It also tracks payments for things such as auto passes, gate passes and parking permits. A new system will include a citizen portal for registering and paying for events online and streamline State Fair processes.

MoPLANTS Phase 5

Phase 5 enhances pesticide applicator processing; interfaces mineral results from ICP lab instrument; and interfaces protein data from Leco lab Analyzer.

CORRECTIONS

The Missouri Department of Corrections (DOC) supervises and provides rehabilitative services to adult offenders in correctional institutions and Missouri communities to enhance public safety.

DOC Systems

DOC system development and maintenance is performed by ITSD-DOC programmers, DOC offenders and contractors using the following technologies:

- Legacy Programming Technologies: RPG/AS400
- Standard Programming Technologies: Java

DOC maintains 31 applications in its application portfolio. Below are descriptions of DOC's most critical systems:

Law Enforcement Notification System (LENS)

LENS is a system for law enforcement agencies that allows authorized users to run an inquiry on any offender under the supervision of DOC through a secure internet connection at no cost. Basic identifying information, current offense, current location or last known address and supervision contact information are a few examples of the information available. In addition, agencies may subscribe to receive electronic notification when selected events of interest occur during a specific offender's incarceration, such as upcoming parole hearings, escapes and releases. LENS has 312 agencies enrolled, 5,134 agency users enrolled and 7,203 subscriptions to events.

Offender Management Systems (ARB, MoCIS & OPII)

DOC utilizes offender management systems including OPII, MoCIS and ARB to manage offenders both in Missouri institutions and in the community. OPII has been in production since 1998 and is a RPG/AS400 based system that is customized to the DOC business processes. OPII contains 591,445 total offender records and 115,969 active offender records.

MOCIS is a modern web based enterprise application written using J2EE. MOCIS consists of several functional modules that together make up a whole offender management system that will eventually replace DOC's legacy offender management systems, OPII, MARS (Medical System) and ARB. The modules now in production are Property, Application Security, Home and Employment, Assessments, Offender Management Plan, Intervention Fees, Earned Compliance Credit Calculations, Programs/Classes, Visitation, and Healthcare. These modules aid the Department of Corrections with successfully managing those functional areas and play a key role in helping DOC fulfill their mission. MOCIS currently has 13,095 active users.

Automated Road Book (ARB) allows Probation and Parole staff to log case notes for offenders under their supervision. On average through ARB, over 2 million user-entered case notes are recorded annually.

Puppies for Parole System

The Puppies for Parole program is a partnership between DOC and animal shelters in which offenders train dogs to increase the likelihood that the dogs can be adopted. The Puppies for Parole system tracks animal shelters and dogs participating in the program. It also includes a public-facing application to promote dogs that are actively being trained so the general public can view dogs available for adoption.



Accomplishments

MoCIS Visitation

The Visitation module of MoCIS was implemented during 2014. This module manages all aspects of the incarcerated offender visiting process for DOC.

MoCIS Module for Healthcare

The MoCIS Healthcare module was implemented at the DOC women's facilities in 2014. It is comprised of four areas of care: medical, mental health, substance abuse treatment and sex offender treatment.

This system is used to track all incarcerated offender medical service records, which contain doctor, nurse, technician, specialists and laboratory requests. Basic health care includes sick call and routine access to prescribed medications as well as adequate screening and examinations, emergency care, ambulatory care, infirmary and hospital care and specialty care. A health care service in this context is defined as clinical authority whereby all medical, psychiatric and pharmaceutical matters involve the judgment of a licensed and/or certified Primary Care Provider (PCP) including physicians, psychiatrists or pharmacists. Included in the definition of PCP are professionals, such as nurse practitioners and physician assistants as prescribed by applicable laws.

The next stage of implementation of this system is scheduled for early, 2015, in which it will be rolled out to the DOC men's facilities.

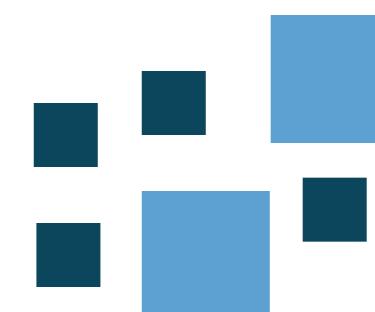
Projects

MoCIS - Updates for new MO Charge Code Format

The format of the Missouri Charge Code is changing from 8 numeric digits to 23 alpha-numeric characters. Multiple agencies are impacted by this change across the state, therefore all agencies are working together to update their respective systems and test interfaces between agencies. Testing has been slated for spring 2015 so this project will modify the charge code formats in our MOCIS system and the interfaces that we use to receive the charge code datasets from MSHP as legislation passes each year. These changes will allow DOC to be in compliance with the new charge code format when all modules of MOCIS are fully implemented.

MoCIS - Offender Finance System

This project replaces the existing Inmate Banking application on the AS\400 through integration into MoCIS. This application replicates the existing functionality and includes many additional features to improve reporting and auditing of financial records for the offender population. Offender finance must follow accounting practices for governing the receipt and control of offender funds while incarcerated, and allow for the collection, transfer and release of monies which may be required by statute or other policies. Implementing this new application into MOCIS will improve the ability to maintain offender financial records while utilizing a modernized application and a modern distributed database.



ECONOMIC DEVELOPMENT

The Department of Economic Development (DED) leverages our competitive advantages and delivers strong economic growth for Missouri.



DED Systems

DED system development and maintenance is performed by ITSD-DED programmers and contractors using the following technologies:

- Legacy Programming Technologies: COBOL, PL/SQL, PERL
- Standard Programming Technologies: C#.NET, VB.NET, MS SQL, Oracle

DED maintains 40 applications in its application portfolio. Below are descriptions of DED's most critical systems:

Jobs System (jobs.mo.gov)

Jobs.mo.gov is DED's Division of Workforce Development (DWD) labor exchange system and public job bank website. It is an electronic job board (much like Monster or Career Builder) allowing employers to post jobs and search for suitable candidates and job seekers to post their resumes and find employment. The system is also used by unemployment benefit recipients to complete their mandated four week reporting.

- **Active job seekers: approximately 158, 000**
- **Job seekers making a job referral: approximately 45,000**
- **Job openings posted by employers: 17,000+**
- **Employers posting jobs: 3,000+**

Tax Credits System (Customer Management System, CMS)

CMS is the primary system for DED to track awarded and redeemed tax credits. Currently all of the state's tax credits are tracked via CMS, with the exception of those belonging to DIFP and DOR. There are 75 tax credit programs from five departments in the system.

Tourism Website

VisitMO.com is a critical component in Missouri Division of Tourism's (MDT) effort to bring tourists and tourism dollars into Missouri. The website allows users to find desirable attractions and events through an appealing and accessible design. The website, based on the DotNetNuke platform, is operated by MDT with support from a contracted partner. There are also a number of ways that tourists can interact with MDT through social media. Tourism-related businesses are able to upload profiles and events and market their businesses.

Workforce Information Database

The Missouri Economic Research and Information Center (MERIC) uses the Workforce Information Database to maintain and update employment statistics, labor market information, business listings and related economic and demographic data.

Workforce Programs System (Toolbox2 - TB2)

TB2 is the case management system used by DED staff and its Workforce Investment Board (WIB) partners. It allows them to manage the enrollment of job seekers in state and federal workforce programs (for example, WIA, Wagner Peyster, TRA and METP) and track the use of services provided under these programs. This third party Oracle-based software has been heavily customized for use in Missouri. Monthly, quarterly and yearly reports are generated from the data in the system to meet federal reporting requirements. Usage of the system includes:

- **New enrollments in workforce programs: 631,705**
- **Total number of services provided: 8,191,321**
- **Job seekers provided a service: 430,593**

Accomplishments

Export Missouri Portal

The Export Missouri Portal includes an online Business to Business Directory (B2B), Online Trade Counselor, and Qualified Lead Program. These web tools will make foreign offices more effective in communicating with Missouri companies about global opportunities. DED will save an estimated \$122,500 annually in FTE hours and allow the DED international sales team to focus more on their core responsibilities of trade counseling exports development.

Work Opportunities Tax Credit (WOTC) Modernization

The WOTC system is used to accept, monitor and track the hiring of applicants from 14 targeted group facing barriers to employment. The old system was a COBOL legacy mainframe system that required major system enhancements to stay compliant with U.S. Department of Labor guidelines. ITSD was able to modify Kentucky's .Net based application and meet the operational needs of Missouri's program.

Show-Me Heroes Redesign and Application

The Show-Me Heroes program helps Missouri Veterans and members of the National Guard and Reserve reconnect with meaningful careers, and showcases MO employers who have pledged to increase efforts to hire Veterans and Service Members.

A new operations portion of the website was developed that is estimated to save approximately 1,080 hours per year for DWD employees administering the program.

A redesigned showmeheroes.mo.gov improves user experience and includes the following features:

- **Enhanced employer location features using Google Maps application**
- **Automated application submissions**
- **Provided additional brand exposure for employers using the "logo scroll" bar on the main pages**
- **Increased visibility of open positions by inclusion of the jobs.mo.gov Veterans' microsite**

Financial Reporting System

This application tracks funds provided through federal grants and the disbursement of funds to subcontractors. The new application replaces an outdated and incomplete web application that required manual labor hours outside of the system to perform certain critical functions. The new system will create efficiencies and saves \$12,000 per year in staff time.

WDQI Phase 2

The WDQI web portal is an innovative Training-to-Work Exploration web tool that is being developed to assist students, job seekers and educators to better understand the connections between training choices and work outcomes. This system allows the public to select from over 200 training programs and see, by degree level, what graduates make in wages and in what industries they are employed in Missouri. The WDQI portal

was made possible thru collaborative efforts of several state agencies. Missouri is the first state to accomplish the combination of workforce and education data and demonstrates how efforts like this can give citizens more power to make better informed decisions.

Mo Jobs Mobile App

The MoJobs app takes several of the key features available to job seekers on jobs.mo.gov and wraps them into a mobile application with versions for Apple and Android devices.

Utilizing the application, job seekers can perform the following tasks:

- Search for and map a job within a certain proximity to the device's location.
- Save job searches and mark jobs as "favorites" to be referenced later.
- Search for and map the nearest DWD Career Centers.
- Log in to existing users jobs.mo.gov account
- View messages from the jobs.mo.gov application

DWD Cost Accounting System

DWD has implemented a commercial cost accounting solution to replace its legacy COBOL mainframe application. DWD uses this system to track all Federal grants and revenue sources. The new system will improve functionality and modernize the technology.

Projects

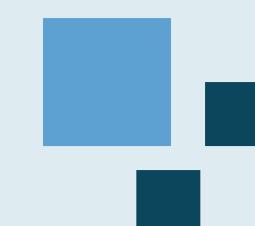
Toolbox2 Replacement

The current Workforce Programs System, Toolbox, is built on legacy technologies.

Functionality is less than desirable and the system is difficult to maintain and modify. The replacement process is already under way via the RFP procurement process. A modern system should increase program effectiveness and reduce the total cost of ownership.

Labor Market Information (LMI) and Eligible Training Provider System (ETPS) Integration

Integrating LMI data with ETPS data would allow job seekers to have a clearer picture of the gaps in their current skill sets when searching for employment in a particular discipline.



ELEMENTARY and SECONDARY EDUCATION

The mission of the Missouri Department of Elementary and Secondary Education (DESE) is to guarantee the superior preparation and performance of every child in school and in life.



DESE Systems

DESE system development and maintenance is performed by ITSD-DESE programmers and contractors using the following technologies:

- Standard Programming Technologies: .NET, MS SQL

DESE maintains 49 applications in its application portfolio. Below are descriptions of DESE's most critical systems:

Adult Learning Systems (HSE & AWARE)

The High School Equivalency (HSE) System (formerly GED), developed in-house on the Microsoft.NET platform, allows individuals, colleges, universities, verifying services and employers to view transcripts and individuals to make payments. AWARE is third party software that allows Vocational Rehabilitation (VR) staff to effectively track, coordinate, communicate, analyze, plan and budget complex services for approximately 156,000 VR open and closed cases to assist with annual federal reporting requirements.

Core Data Application

The Core Data application is a centralized portal through which Local Education Agencies submit their educational data to DESE.

Educator Certification System

The Educator Certification system allows all educators and both new graduates and existing, to submit online applications for certification. This includes the ability for educators and administrators to upgrade certifications and allows schools and districts to access the certification information they need. In the past year more than 38,600 certificates have been processed online.

Electronic Payments and Electronic Grants Management System

The Electronic Payments and Electronic Grants System (ePeGs) tracks budget, plans and expenditures for all grants, and creates grant payment data.

Foundation Formula System

The Foundation Formula System is critical for maintaining and calculating the factors involved in State of Missouri payments to Local Education Agencies.

Improvement, Monitoring, Accountability and Compliance

IMACS is the mode in which schools/LEAs enter and submit the special education monitoring self-assessment student data. This data is then evaluated at the Department level and results of that evaluation are reported back to the schools/LEAs. This system tracks any follow-up activities resulting from the reviews. The system also houses, manages, and reports all of on-site and special review information. This application contains key components: Compliance Planning System, Special Education Surrogate and Tiered Monitoring.

Payment Management System (PM)

The Payment Management system is the mechanism used to create and process payment documents to school districts at least once a month. Subsystems that process payments to be paid in a particular month are ePEGS, School Foods, and School Finance. Sections have the ability to process manual payments in Payment Management for those programs that are not part of a subsystem. DESE processes \$380,000,000 in payments per month through the Payment Management System.

School Data Systems (MCDS & MOSIS)

The Missouri Comprehensive Data System (MCDS) allows the public to view data on Missouri's school districts and students on the MCDS public website. MCDS also has an internal component for DESE staff and a secure extranet for school districts to view data. MCDS runs on the Microsoft SharePoint platform.

The Missouri Student Information System (MOSIS) is third party software that allows school districts to upload data to DESE and allows DESE to manage that data.

School Foods

The School Foods application is the mechanism for the application process for public and non-public schools to participate in the National School Lunch Program, School Breakfast Program, Special Milk Program and Fresh Fruit and Vegetable Program. The system also supports the claiming and payment reimbursement process, as well as, the monitoring review process. The system supports the federal USDA mandated requirements and state requirements for participation in the School Nutrition Programs.

Security System and User Manager

The Security System is the core security application that, with the help of Active Directory, controls authentication of over 101,000 user accounts. In addition, the application interfaces with each DESE web application to manage content visibility within the secured environment.

User Manager is an application which contains a front end allowing security administrators the ability to grant and remove security privileges, unlock inactive accounts, and initiate password resets. It allows for role based security down to the district level in some cases.

Accomplishments

AWARE Enhancements

There were multiple projects enhancing the AWARE application. The enhancements streamline the process of providing services to Vocational Rehabilitation (VR) clients.

Charter Expansion Project

Senate Bill 576 allows for any district to create a charter school and many systems were modified to comply with the new statute.

DESE Website Redevelopments

The DESE website, dese.mo.gov, was redeveloped in the Drupal open-source content management platform. Missouri School for the Deaf (MSD), Missouri School for the Blind (MSB), MO Virtual Instruction Program (MOVIP) and MO Assistive Technology sites (msb.mo.gov, msd.mo.gov, movip.org and at.mo.gov) were also redeveloped. The project standardized the websites using mo.gov responsive design theme, greatly improving usability for citizen access from any mobile device.

Early Childhood Special Education (ECSE) Enhancements Phase I

This project gave DESE the ability to use ePeGS to process ECSE grant related work items. Phase I moved payment processing for the 2013-14 Final Expenditure Report (FER) from the existing ECSE application to the ePeGS application. This enhancement brings the ECSE into compliance with the federal government (CFR Section 300.816).

ePeGS Enhancements

Numerous enhancements to ePeGS involving the creation of new pages for all programs, enhancements to Special Education

Entitlement grant, Schoolwide Pool Final Expenditure Report (FER), No Child Left Behind (NCLB) Grant and Parents as Teachers (PAT) are saving Local Education Agencies (LEAs) and DESE approximately 100 hours each year.

GED to HSE Project

The DESE contract with GED has expired and a new set of High School Equivalency Tests (HiSET) was implemented January 1, 2014. The system was modified to accept the new tests. The new system provides a portal for citizens to verify test status, eliminating paper processes and phone calls.

Missouri Commissioner for Deaf and Hard of Hearing (MCDHH) Registration Form Automation

A new application was developed to capture registrations and payments for the Annual Missouri Interpreter's Conference. Approximately 600 attendees are no longer required to print, complete, and mail registration forms along with payment. Accepting credit cards online is a new feature that has expedited the receipt and return of funds to the customer as well as saving over \$400 per year in mailing costs. MCDHH saves 75% of one FTE's time during this 3 month registration process.

School Foods Application Enhancements

Numerous enhancements were made to the School Foods application that significantly reduce manual paper processes. In addition, the system has the capability to attach documents to the application further providing organization and reducing the need for physical files. Both DESE and the Local Education Agencies (LEA's) they serve benefit from these enhancements.

Accomplishments (cont'd)

Summer School Application Automation

This project automated the paper-based summer school application used by more than 500 school districts. The new application provides online submission of applications and an approval process. Prior to this automation, 25% of one staff member's time was spent during summer school registration, coordinating with the districts about their application.

Projects

Early Childhood Special Education (ECSE) Phase II

The objective of Phase II is to incorporate ECSE data collection into ePeGS. This will lead to a 65% time savings for DESE and District users when entering and reviewing data.

EDFacts

EDFacts is a U. S. Department of Education initiative to put performance data at the center of policy, management and budget decisions for all K-12 educational programs. Data reflects at the school level and includes demographics, program participation, implementation, and outcomes. This project will create a user interface for data reported under federal law to be shared with the U.S. Department of Education and utilized by DESE Office of Data Management staff. Completion of this project will reduce state and district data burden, streamline data practices and improve state data capabilities.

ePeGS Enhancements

Approximately 27 enhancements across several Grants in the ePeGS application will allow DESE to be in compliance with Federal and State policies regarding the collection of CEP details, Stipend, and Homeless Coordinator data. Completion of this project will create a user friendly, efficient product resulting in significant time savings, increased accuracy, automated workflows and data quality for the department.

ePeGS Reports Project

Currently, DESE's Office of Data Management runs numerous SQL queries to obtain data for the end-users of the ePeGS application. This results in manual efforts and time needed to manipulate the data into a usable format. This project will develop approximately 17 SSRS reports which will be accessible through the ePeGS report interface. Once completed, the users can run the reports at-will. It is estimated the new reports will save the department up to 65 hours of staff time per week.

MCDS Early Learning Data

All data collected by the Early and Extended Learning Section will be incorporated into the Missouri Comprehensive Data System (MCDS). The data will be used to improve accuracy of identifying the characteristics of high-needs families and the quality of Early Childhood services. Data will also be used to compare factors and trends with students such as grades and attendance.

HEALTH and SENIOR SERVICES

The Department of Health and Senior Services (DHSS) is the leader in promoting, protecting and partnering for health for Missouri.



DHSS Systems

DHSS system development and maintenance is performed by ITSD-DHSS programmers using the following technologies:

- Legacy Programming Technologies: COBOL
- Standard Programming Technologies: .NET, MS SQL, Oracle

DHSS maintains 117 applications in its application portfolio. Below are descriptions of DHSS' most critical systems:

Immunizations System (ShowMeVax)

ShowMeVax is used by health care providers to view, record and track immunizations in the state immunization registry for clients they serve. There are 5,000 users from 1,241 health providers, local public health agencies and schools throughout the state utilizing the registry.

Missouri Electronic Vital Records System (MoEVR)

MoEVR supports registration of Missouri vital events for the department and other users such as funeral directors, attending physicians, medical examiners and birthing facilities.

Public Health Event Detection (ESSENCE)

The Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) system inputs electronic emergency department (ED) data for the purpose of syndromic surveillance. Syndromic surveillance is the use of non-traditional data sources to detect public health events earlier than possible with other methods. Examples of syndromic surveillance data include over-the-counter drug sales, laboratory report orders and absenteeism rates. Missouri conducts syndromic surveillance using electronic hospital emergency department (ED) visits. ESSENCE can also be used for situational awareness during known health events by querying all ED visits for a particular syndrome or by keyword (such as carbon monoxide, animal bite, injury, etc.). There are currently over 400 users of ESSENCE throughout the state who are either public health authorities or staff from hospitals that send electronic emergency room data.

Women, Infants and Children (WIC) Information Network System

The WIC Information Network System allows DHSS to certify and issue benefits, food and nutrition education to categorically eligible women, infants and children.

Accomplishments

Immunization Interoperability

As part of Stage 2 of Meaningful Use, providers are required to submit vaccination messages electronically via HL7 to Immunization Registries. As Meaningful Use has gained steam, more and more providers are contacting DHSS to establish immunization interfaces with ShowMeVax. Since the inception of this project, 387 providers were successfully validated and moved to production and over 3.5 million vaccination records have been received through HL7 messaging. Currently, there are several hundred additional providers that are in various stages of implementation. Ongoing work to bring those providers on board with ShowMeVax will continue to ensure Meaningful Use Stage 2 requirements are met for providers and to continue to increase Missouri's reported vaccinations.

Vaccines for Children (VFC) Vaccine Ordering

The VFC program distributes millions of vaccines to providers throughout the United States. Missouri VFC providers order vaccines supplied by Centers for Disease Control and Prevention (CDC) through DHSS. Each year, Missouri's VFC program distributes more than 1 million vaccines to Missouri health care providers to vaccinate children who cannot afford to pay for this life-saving resource. These vaccines are administered to thousands of eligible Missouri children to ensure their protection against all vaccine-preventable diseases.

This new vaccine ordering system allows over 650 MO healthcare providers to order their vaccines via an automated interface with the CDC Vaccine Tracking System (Vtrcks) replacing a manual paper process. Providers are now spending less time filling out forms for ordering and inventory with potential savings in excess of 15,000 hours each year. What took, on average 3 hours per month to do, now takes 15 minutes. Also providers are receiving their vaccine 6-7 days faster than previously received.

Health Homes

This innovative project allows DHSS to share emergency room (ER) data with DMH and DSS. Notification of ER visits through traditional billing systems was slow and did not allow for prompt patient follow-up. ITSD in partnership with DHSS, DMH and DSS, developed a data exchange that captures hospitalization events already being reported to the State of Missouri for syndromic surveillance, thereby laying the foundation for notifying Health Home case managers in near real-time of client ER visits. The emergency room visit data and hospital admission events are pulled from Hospital Electronic Syndromic Surveillance (HESS) data that is already transmitted in real-time to DHSS from Missouri hospitals.

The Health Home holistic care model encourages participants to seek support from their health management team first before heading to the emergency department. In a preliminary investigation, during a one month period, over 5,200 Health

Home participants, or roughly 14% of all Health Home enrollees, visited an emergency department. At an average Medicaid cost of \$1,349.00 per visit, the 5,200+ participants potentially cost Medicaid over \$7 Million. Based on this one month measure, a full year could potentially cost well over \$84 Million. Preliminary results are showing an approximate 10% reduction in ER visits which could translate to over \$700,000 of potential savings per month or over \$8 million in savings per year just in reduction of ER visits. Clearly a significant cost savings can be achieved by reducing hospital readmissions through proactive care engagement.

Missouri Information for Community Assessment (MICA) Modernization

DHSS Child Care team is required to inspect and monitor child care facilities around the state ensuring licenses are up to date and the facilities are in compliance with state statutes and licensing rules. One component of MOCCIS is a mobile application that allows inspectors to complete electronic data entry for the inspections on tablets in the field, saving approximately 8,000 hours per year in manual data entry. Once reviewed by a supervisor that data is then displayed on the public-facing Childcare Portal.

Projects

Public Health Information Management System

The Public Health Information Management System (PHIMS) is a continuation (Phase 2) of the Department's larger Public Health Data project and MICA modernization. The overall goal of the project is to develop a common means to receive, validate and process public health data, and allow access to these data sets for the purpose of determining the health status and needs of Missourians. To accomplish this, the development and implementation of a department-wide platform on which all department systems can operate for data dissemination is being created. This moves the department toward achieving standardization of reporting, both to and from the department, implementation of standards consistent with national standards, and standardization of data presentation across all areas of the department. During Phase 1 of the project, a data warehouse was created. Phase 2 of the project is to complete the development of a front-end, data access system that includes a public web query interface for use with the newly designed data warehouse.

Meaningful Use Stage 2 Registration & Onboarding Database

Meaningful Use is a program created by Centers for Medicare and Medicaid Services (CMS) that provides incentive payments to eligible professionals and hospitals who adopt, implement, upgrade or demonstrate use of certified electronic health record technology. The Department of Health and Senior Services is tasked with collecting the registrations of intent from such professionals and hospitals. A web based application will automate the current manual paper registration process and enhance DHSS' ability to work with organizations in several stages of the Meaningful Use process.

HIGHER EDUCATION

The Coordinating Board for Higher Education (CBHE), the Missouri Department of Higher Education (MDHE), and the state's institutions of higher education work collaboratively to support a diverse system of affordable, accessible, high-quality educational institutions that demonstrate student learning and development, encourage and support innovation, foster civic engagement, enhance the cultural life of Missourians and contribute to economic growth.

MDHE Systems

MDHE system development and maintenance is performed by ITSD-DHE programmers using the following technologies:

- Standard Programming Technologies: Java

MDHE maintains 11 applications in its application portfolio. Below are descriptions of MDHE's most critical systems:

Customer Relationship Management System

This system tracks visits to MDHE, contacts, requests for speakers and workshop registrations.

Financial Assistance for Missouri Undergraduate Students

FAMOUS is used by the MDHE to administer financial aid for Missouri students attending Missouri's Private, Public and Other Nonprofit Post-Secondary Institutions (PSIs). Using this application PSIs request awards and High School Counselors assist students in preparation for attaining grants and scholarships. As of late October, awards totaling more than \$40.9 million for A+, Access Missouri, Bright Flight and Ross Barnett Scholarship Programs had been distributed to 51,305 students attending Missouri PSIs for the 2014-2015 academic year via FAMOUS.

Program Inventory System

This database maintains demographics on higher and continuing education institutions in Missouri, course offerings and degree programs. A public-facing web site search is used by persons seeking information about higher education offerings throughout Missouri.

Proprietary Schools System

This system is used to obtain student enrollment and exit information for training and courses offered by Proprietary Schools. By definition, Proprietary Schools are for-profit education (also known as the education services industry or proprietary education) operated by private, profit-seeking businesses. Proprietary School personnel and students are able to record student enrollment data and student exit data that can then be used for analysis by MDHE to identify trends, success rates, and overall statistics. There were 10,539 newly enrolled students at 59 different institutions during 2014; data collected from 57 different proprietary schools indicate that 8,892 students exited their enrolled course/program during 2014. The application provides useful search tools for both MDHE and Proprietary Schools.

Publications System

The Publications System is an online ordering, fulfillment and inventory system for MDHE publications available to constituents. While many of the publications are available as an electronic version that can be immediately downloaded, some are specialty items which are packaged and mailed directly to the requestor upon receipt of their order. During 2014, there were 547,379 items distributed to parents, students and financial aid professionals via this system. Examples of items included: 62,480 copies of The Source: MDHE's Guide to Grants, Scholarships, Loans and More booklet; 43,264 copies of Never Too Early: College Prep Starts Now publication, and 74,052 copies of Planning for Financial Success.



Accomplishments

FAMOUS Minority Teaching

This project provides improved tools to assist with the agency's management of the Minority Teaching program in the FAMOUS system. MDHE will have improved capability to report on program participants, loan portfolio statistics and more. The previous process required manual review, assembly and compilation from the original paper files obtained from DESE in 2010 when the Minority Teaching program was transferred to MDHE. The result is increased productivity, staff efficiencies, lower costs and improved program management for MDHE. Students will benefit from an automated application and document delivery process. Mailing costs of paper forms, releases, and agreements, will be avoided.

Free Application for Federal Student Aid (FAFSA) Completion Portal

This project developed a portal to the aggregate data available to the public. The data depicts the success rate of the efforts of Missouri High School's attempts to increase FAFSA completion. The data will allow staff to identify targeted geographic areas where additional or improved outreach activities are warranted. A webpage has been developed to provide the public with the number of FAFSAs completed per school. MDHE expects an increase in the number of students attending college as a result of this FAFSA Completion Portal and increased awareness of financial aid opportunities.

Projects

Academic Program Actions

This project will complete full analysis for developing and automating a manual process for colleges and universities to submit proposals for new and changed curriculum (academic program actions). The goal is to streamline a process to eliminate paper distribution, promote efficiencies in the management of communications regarding submitted proposals, and standardize the proposal process for all colleges and universities.

The screenshot shows the official website of the Missouri Department of Higher Education. The header includes the state seal, the title "Missouri Department of Higher Education", and links for "MO.gov", "Governor Jay Nixon", "Find an Agency", "Online Services", and a search bar. Below the header are navigation links for "Colleges & Degrees", "Planning & Paying for College", "Initiatives", "Policy", "Links & Resources", "Research & Data", and "News & Events". The main content area features a large image of a graduate and the text "Inside Missouri HIGHER EDUCATION News from the Missouri Department of Higher Education" followed by a call-to-action button "CLICK HERE TO VIEW THE LATEST EDITION".



INSURANCE, FINANCIAL INSTITUTIONS & PROFESSIONAL REGISTRATION



DIFP

Department of Insurance,
Financial Institutions &
Professional Registration

The mission of the Missouri Department of Insurance, Financial Institutions and Professional Registration (DIFP) is to efficiently and effectively encourage a fair and open market for consumer service industries.

DIFP Systems

DIFP system development and maintenance is performed by ITSD-DIFP programmers using the following technologies:

- Standard Programming Technologies: ASP.NET, VB.NET, MS SQL

DIFP maintains 50 applications in its application portfolio. Below are descriptions of DIFP's most critical systems:

Cash Receipts System

The Cash Receipts System tracks and coordinates incoming revenues and reimbursements with invoices and electronic funds transfer.

Insurance Invoicing System (MIDIS)

MIDIS is used to create, track and maintain 13,883 invoices annually.

Integrated Regulatory Database Systems (IRDS)

IRDS supports the Insurance Division's day-to-day administrative functions and processes, including communications with the National Association of Insurance Commissioners (NAIC).

Optical Imaging System

The Optical Imaging System indexes the data stored in the Professional Registration system and provides electronic document retrieval for all 40 professional boards. This system is currently a repository for over 21 million images with 1,500,000 to 2,000,000 images being added annually.

Professional Registration System

The Professional Registration System is used by the Professional Registration Division of DIFP when performing licensing and practice review functions. DIFP's 40 professional boards and commissions license and regulate the activities of approximately 435,000 individuals representing 240 different trades and professions. This system processed approximately 48,000 applications and 233,000 biennial renewals during 2013. Of those 233,000 renewals, approximately 162,000 were performed through the online renewal portion of the system. This system is currently being replaced.

Taxation System

The Taxation System records, tracks and processes the annual tax responsibilities for Missouri insurance companies, surplus lines producers and captive insurance companies.

Accomplishments

Electronic Fund Collections via NAIC Applications

Electronic fund transfers from the NAIC SERFF and NIPR applications allow for collections of funds and complete online transactions of Rate and Form Filings and late renewals for Producer Licensing instead of invoicing in arrears and manual processing. There has been \$409,422.00 collected from 10,050 transactions since April 2014. Reducing the number of mailed invoices from 3,027 in period 4/1/2013 to 12/01/2013 to 315 in the same period.

Taxation Web Portal

Constituents can now submit Surplus Lines and Self-Insured Premium Tax annual and quarterly tax and payroll reports using an online portal. The Web Portal has over 1,000 users from the Insurance Industry to date. The Surplus Lines Web Portal has received a total of 25,768 Appendix 1 and Appendix 3 filings since inception. The Self-Insurance Web Portal had over 3,000 records received during the first filing season. DIFP benefits from increased productivity by easily transferring current assignments from data entry to other business needs. The Division of Taxation was able to eliminate one full time position.

Projects

DIFP Statistics Web Portal

This project will create a public-facing data portal for a variety of insurance-related statistics.

Premium Tax Reporting System Upgrade

This project will upgrade the Premium Tax Reporting system by eliminating reliance on Microsoft Access technology.

Professional Registration Licensure System

The existing licensure system for Professional Registration went into production in 1999 and serves all 40 boards. The project to implement a modern COTS solution is underway. The goal of this multi-year project is to upgrade the functionality of the system while providing for a more modular approach in meeting the needs of the individual boards. The future system will improve usability for the state's approximately 460,000 licensed professionals and employ more efficient self-service functionality. The project is 70% complete and scheduled system go-live is June 2015.

LABOR and INDUSTRIAL RELATIONS

The Department of Labor and Industrial Relations (DOLIR) works to promote industry and labor and protect the rights and safety of Missouri's workforce.



DOLIR Systems

DOLIR system development and maintenance is performed by ITSD-DOLIR programmers using the following technologies:

- Legacy Programming Technologies: COBOL, CA Gen, AS/400
- Standard Programming Technologies: JAVA, DB2, MS SQL

DOLIR maintains 12 applications in its application portfolio. Below are descriptions of DOLIR's most critical systems:

Unemployment Benefits System

This system is used to process unemployment benefit payments to unemployed Missouri workers. The system facilitates prompt payment of unemployment benefits to eligible claimants via direct deposit, debit card, or check. The system processes Combined Wage Claims (CWC) for unemployed workers who have wage credits in other states, claims for federal workers and former members of the military. It also manages child support withholding, SSN and alien verification, Form-1099s for claimants, imaging of paper claim forms, work search verifications and waivers, tax withholding requests, adjustments to claims, confidential information requests, and images documents. Within the past 12 months, 174,778 Missouri workers received Unemployment benefits totaling \$504,322,958. This legacy mainframe-based system is currently being modernized.

Unemployment Tax System (Contributions & USTAR)

The Contributions (Tax) Application and USTAR are used to handle the collection of Unemployment Insurance (UI) taxes from employers in the state. The system provides a means to establish and maintain accounts for employers, calculates tax rates and makes liability determinations. The system processes quarterly Contribution Wage (CW) reports, payments from employers, adjustments, refunds to employers and benefit charges. Within the past 12 months, an average of 129,024 employers have paid UI taxes quarterly totaling \$640,854,982.16. This legacy mainframe based system is scheduled to be replaced in 2016 with a new, modernized solution.

Workers' Compensation System (AICS)

The Automated Integrated Claims System (AICS) assists in administering the Missouri Workers' Compensation Law and applicable rules. The system captures images and data from required documents such as First Reports of Injuries, Claims for Compensation, Answers to Claims for Compensation, Notice of Commencement/Termination of Compensation, medical records and documents relied upon by administrative law judges in approving Compromise Stipulations of Settlement and issuing awards on disputed cases. Within the past 12 months, 104,003 workplace injuries were reported to DOLIR. Administrative law judges approved a combined total of 21,088 Stipulations of Settlement and awards. This legacy system is a candidate for modernization when resources become available.

A screenshot of the DIFP website. The top navigation bar includes links for MO.gov, Governor Jay Nixon, and Find an Agent. Below the navigation is a banner for the Professional Registration Licensure System, which is 70% complete and scheduled to go live in June 2015. The main content area shows three categories: Licensing, Industry Forms, and Licensee Search.

A banner titled "Protecting Missouri Consumers". It features four circular icons: a doctor holding a child, a woman smiling, a construction worker, and a man in a hard hat. Text on the banner reads: "Protecting Missouri Consumers", "Questions? Complaints?", and "File a complaint now".

Accomplishments

Cost Accounting/Time Keeping Modernization

A new Cost Accounting/Time Keeping solution replaced the State Employment Security Agency (SESA) Accounting System, a 40 year-old COBOL mainframe-based batch accounting system. This improved financial reporting to support management, decision making, and reduces manual processing, data entry, error resolution, and correcting/adjusting entries.

Unemployment Insurance Auditor Application

A web application allows Division of Employment Security auditors to manage information obtained when auditing Employers and collecting delinquent taxes. A mobile component allows auditors to work offline and synchronize data back to the web application when connected to the network. Google heat maps determine the most efficient routes to employer addresses.

DOLIR Call Center & Interactive Voice Response (IVR) Modernization

An upgrade to DOLIR Call Center and IVR solutions ensure sustainability and saves money in the long term.

Local and County Incarceration Data

Data is received daily from local jurisdictions to verify claimants receiving Unemployment Benefits were not incarcerated within the benefit period.

Office of State Courts Administrator (OSCA) eFilings

OSCA eFiling is the an automated electronic solution for filing Division of Employment Security court documents (Liens, Lien Releases, Certificate of Assessments) into OSCA's Electronic Case Filing Exchange. This web service replaces the manual printing, handling, faxing, and mailing of these documents to OSCA by Department of Labor staff, thus creating real dollar savings and efficiencies in staff resource time.

Projects

Unemployment Insurance Modernization (UIM)

The current Unemployment Insurance Benefits and Tax Systems have served the state for many years (parts of these systems are over 40 years old), however the risks associated with continuing to use the system have increased over time. These risks stem from its poor documentation, complexity, and use of legacy technologies that make it increasingly difficult to support and modify. The system also inhibits DOLIR from fully automating and modernizing its business processes.

UIM began in February 2013. Expected results of the project include:

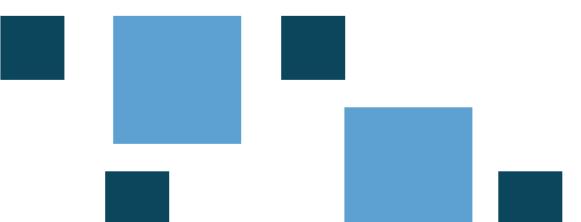
- **Improved services to Missouri's employers and claimants, including reduced processing times**
- **Improved data integrity and a reduction in claim and contribution processing errors**
- **Improved productivity for DOLIR staff due to increased automation**
- **Reduction in paper**
- **Improved compliance with federal and state regulations**
- **Reduced mailing and returned mail**

Division of Workers' Compensation (DWC) Modernization

The current Workers' Compensation system has served the state for over 20 years. The system inhibits DWC from fully automating and modernizing its business processes. This multi-year project is in the planning stages to utilize information obtained from the analysis to obtain services for building a modernized Workers' Compensation solution.

Cashiering / Deposits

This project will implement intelligent, high-speed scanners providing optical character recognition technology to read Employer Contribution checks. Check 21 software will be used to send images of checks directly to the bank and provide more efficient automatic deposit process.



MENTAL HEALTH

The Department of Mental Health (DMH) provides prevention, treatment and promotion of public understanding for Missourians with mental illness, developmental disabilities and drug, alcohol and gambling addictions.

DHSS Systems

DMH system development and maintenance is performed by ITSD-DMH programmers using the following technologies:

- Standard Programming Technologies: C#.NET, VB.NET, ASP.NET, MS SQL

DMH maintains 172 applications in its application portfolio. Below are descriptions of DMH's most critical systems:

Customer Information Management, Outcomes and Reporting

CIMOR is an enterprise system covering a wide-range of mental health services for DMH and its contracted providers. It is a web-based .Net/SQL Server application containing nearly 1000 pages that uses several Microsoft BizTalk components, including message translation, message routing, message orchestration, business rules engine and batching processes. CIMOR:

- Primarily serves to manage DMH program enrollment and is a repository for billing and reporting data
- Stores records of clinical data such as patient demographics, diagnoses, attending physicians, bed management/assignment
- Provides a service matrix which includes procedure code modifiers, diagnosis groups, practitioner groups, base rates and billable payer types
- Provides for the intake and tracking of consumers, maintenance and tracking of expenditures, recording of clinical encounters and grant management
- Generates bi-monthly claims (Medicaid billing) for payment and claims adjudication
- Provides administrative functions such as gathering Medicaid identification numbers and eligibility dates for consumers
- Provides for Event Management Tracking (EMT), such as medication errors, abuse/neglect, restraints, elopements, and much more. Information regarding investigations and decisions is also tracked.

CIMOR bills professional claims for Medicaid, processing over \$1 billion annually which is 89% of the department's total billings.

Claim Builder (CB)

CB creates and submits DMH Facility Healthcare Claims to Medicaid, Medicare and insurance companies. CB submits and processes Medicaid Professional, Medicaid Inpatient, Medicare Professional, and Medicare Inpatient Ancillary claims.

CB is loosely connected to CIMOR and uses the same electronic data processing as CIMOR for sending and receiving HIPAA Compliant Claims and Electronic Explanation of Benefits (EOB). CB creates and submits claims for 34 DMH facilities. CB bills approximately \$114 million annually which is 10% of the department's total billings.

MISSOURI DEPARTMENT OF



MetaCare Enterprise RX

MetaCare RX is a pharmacy management and patient safety system presently installed at 7 Psychiatric Hospitals in DMH. MetaCare RX is a closed-loop medication ordering, administration, and patient safety system that links pharmacists, physicians, and nurses to improve the delivery of patient care. MetaCare provides safeguards at every step where medication errors might occur: prescribing, transcribing, dispensing, administering, and monitoring.

Missouri Employee Learning System (MELS)

MELS is an enterprise DMH Learning Management System. The technology is open source software called Moodle (Modular Object-Oriented Dynamic Learning Environment) that provides educators, administrators, and learners with a single, robust, secure, and integrated system for personalized learning environments. In addition, there is an add-on component called ELIS (Enterprise Learning Intelligence System) that is designed to enhance Moodle for creating and managing learning programs. DMH adopted MELS in February 2013 and now supports 8,000+ users for eLearning needs. MELS supports mandated requirements for Training Documentation, Interpretive Guidelines, and Survey Procedures. MELS also supports critical training mandates for things such as safety training.

Accomplishments

Action Plan Tracking System (APTS)

APTS is a critical application for monitoring issues and deficiencies found by Service Coordinators, Quality Enhancement Nurses, as well as other division quality management functions for individuals receiving services from DMH contracted providers. In 2014, the APTS application was made available to the Senate Bill 40 Providers and Private Targeted Case Management agencies to eliminate redundant systems for tracking deficiencies and allow these entities to directly input their own data as opposed to DMH keying it in for them. The upgrade is estimated to save DMH up to \$40,641 in staff time per year if all agencies adopt this new method of tracking.

BIZTALK Upgrade

The Biztalk servers and software used for CIMOR system integration were upgraded in 2014. Since CIMOR is a critical system to ensure business continuity at DMH, ITSD completed this project to extend the life of CIMOR by converting the Biztalk servers, software and licensing to newer models. The upgrades also reduced the number of licenses needed, resulting in an on-going cost savings of \$80,541.23 annually. The savings outweigh the cost of the project within the first year.

Customer Information Management, Outcomes and Reporting (CIMOR)

In 2014, ITSD completed over 300 improvements to the CIMOR system. The enhancements to the system allow DMH to continue to meet federal requirements and ensure regulatory compliance. The enhancements also allow DMH to comply with audit requirements, mitigate risks, continue provider billing, improve accuracy, improve efficiency, and enhance program integrity. Since CIMOR is a critical system to DMH business, these improvements are critical to ensure continued business continuity at DMH.

Projects

Claim Builder Enhancements

This project will remove the dependencies on old platforms and technologies, fully integrate Claim Builder with CIMOR by matching payment data back to the claim and/or service, increase fiscal auditing functionality and reporting, enhance data security, and decrease DMH and ITSD human resource hours expended by removing manual interventions and backend data entry fixes wherever possible. A new system that is fully integrated with CIMOR data and provides auditing reports for Medicaid Disproportionate Share Hospital (DSH) has the potential to save DMH \$180,000 per year on FTE to complete such audits.

Developmental Disabilities Utilization Review

The Utilization Review Budget (UR Budget) is a highly manual process. An analysis project was completed in 2014 to document the requirements and preliminary design for incorporating the UR Budget including services, amounts, providers and a workflow for service and overall budget approvals into CIMOR and related reports as appropriate. In 2015, the functionality will be incorporated into CIMOR. This project will increase accuracy by reconciling the budget to the actual services input and produce increased efficiencies by copying the previous year's budget and modifying accordingly rather than starting from scratch. The potential annual cost savings is estimated to be \$211,120 in staff time. This means the project will pay for itself twice the first year after implementation.

Electronic Medical Records System (Chart Assist)

The Nursing Flow Sheets module will be rolled out to the three facilities in 2015. A final core module, Bio-Psycho-Social Assessments is currently in development. After completion of this core module, the system will be comprised of five core modules and other functionality that provides DMH interdisciplinary treatment teams the ability to document treatment, measure progress, and retain vital information necessary for treatment.

Electronic Content Management (ECM)

Since the 2 pilot locations were completed successfully in 2014, ITSD is currently conducting a project to implement the OnBase ECM system for the Human Resources departments in eight additional DMH locations. It is expected that this project will eliminate the need for file cabinets and associated office space in the eight locations, which could result in a potential cost savings of \$46,494 per month. This project will also save time on document retrieval, and allow faster capturing and routing of documents. The project also assists with standardization of employee records and folder structures across DMH.

Immunizations

DMH has a need to track immunizations for both employees and consumers in a consistent manner across all facilities. This is a critical process necessary to control infection in the hospital setting and meet Joint Commission accreditation criteria. At present,

each DMH facility tracks immunizations using different software and in some cases, MS Excel or paper and pen. By implementing this new system in a consistent, standard way, facilities can track immunizations, tests, and results in a precise manner with ticklers for follow up tests and immunizations. Additionally, by tracking the lot and manufacturer data, infection control staff will be able to respond faster to product recalls. This system will also standardize the collection and presentation of infection control data across 15 DMH inpatient facilities. It will further allow for aggregation of data to support the movement of employees or consumers to other inpatient environments.

Integrated Risk Assessment (IRA)

IRA is the repository of all information necessary to make key risk management decisions and treatment decisions involving clients residing in forensic facilities within DMH. The current version is presently used at all forensic facilities, but is running on outdated technology and needs enhanced functionality in order to meet the continued business needs of DMH. The system will be upgraded to a web based application and enhancements, such as workflow, e-signatures, and validations will be incorporated in the upgrade. The workflow enhancements alone are estimated to save DMH \$94,773 per year in staff time with the efficiencies created.

MetaCare RX eMAR and CPOE

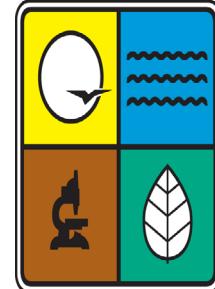
The functionality of the META Pharmacy system will be expanded in the next year. Electronic Medical Administration Record (eMAR) and Computerized Physician Order Entry (CPOE) features are being implemented in several of the DMH facilities. Implementation of eMAR and CPOE will reduce potential medication errors overall by insuring that the right medication is given at the right dosage at the time to the right patient; provide for faster, more efficient delivery of healthcare for patients; improve decision-making with accurate documentation; computerize the medication order process; allow for cross-checking with existing medication orders for any drug interactions, duplications, or allergy interactions at the point of entry resulting in immediate correction; allow coordination with evidence-based medications that are on the formulary; and provide better overall reporting to improve patient care.

Timekeeping

DMH is implementing a standardized timekeeping, scheduling, and attendance system, called CareWare, in 9 facilities. The system interfaces directly with Sam II and automates timekeeping reports, such as tardiness, FMLA, sick leave usage and call-in patterns. The timekeeping system is currently in the pilot stage at 2 CPS facilities and is 92% complete, and the project has expanded to 3 St. Louis facilities at 84% complete. The remaining 4 facilities are scheduled to be completed in 2015.

NATURAL RESOURCES

The mission of the Department of Natural Resources (DNR) is to protect, preserve and enhance Missouri's natural, cultural and energy resources.



DNR Systems

DNR system development and maintenance is performed by ITSD-DNR programmers using the following technologies:

- Legacy Programming Technologies: Lotus Notes, Microsoft Access
- Standard Programming Technologies: C#.NET, Java/Websphere, MS SQL, DB2

DNR maintains 102 applications in its application portfolio. Below are descriptions of DNR's most critical systems:

Air Quality - Missouri Emissions Inventory System (MoEIS)

MoEIS is a JAVA system that manages information about regulated facilities, enforcement classification, operating permit type and operating status for air quality. The system allows regulated facilities to input emissions data required by the EPA.

Campground Reservation System (CRS)

This third party online transactional system is used by the public to reserve State Park campgrounds and process online payments.

ePermitting System

ePermitting allows the public to apply for, pay for and receive Land Disturbance permits from DNR via an IBM J2EE JAVA and DB2 web-based system.

Environmental Sampling - Laboratory Information Management System (LIMS)

LIMS stores data from sample analysis from Environmental Services Program (ESP) testing of Missouri waterways, air and soil for more than 660 different compounds, including E. Coli. The data is provided to the public via the dnr.mo.gov website and is used to determine waterway/beach closures. This is a third party application with data residing in SQL.

Field Inspections - Assistance Compliance Enforcement

ACE is a Microsoft .NET system that enables the Division of Environmental Quality to track assistance to facilities via environmental visits, investigation of environmental concerns, inspections for compliance and enforcement to return facilities to compliance.

Hazardous Waste - Site Management and Reporting System

SMARS is a system used by the Hazardous Waste Program to register and track hazardous waste sites and clean-up operations across the state. This application is a candidate for conversion to a web-based application. It is currently a Microsoft Access solution with data residing within Access itself.

Soil & Water Quality - Missouri Soil & Water Information Management System

MoSWIMS tracks an annual \$40 million cost-share program for soil conservation efforts within the state. Districts process contracts more efficiently and landowners see a faster turnaround on receiving their reimbursement checks. This JAVA system was used by the State of Missouri's Drought Response team during the 2012 drought.

Solid Waste Management - Fees and Taxes (FAT)

FAT is an application used by the Hazardous Waste Program to track fees and taxes on hazardous waste generators, haulers and others dealing with hazardous waste. This application is a candidate for conversion to a web-based application and expansion to additional programs. FAT is currently a Microsoft Access front-end solution with data residing in DB2.

Water Quality - Missouri Clean Water Information System (MoCWIS)

MoCWIS is used by DNR to permit, track and monitor facilities that discharge to waters of the state. This JAVA system also tracks modifications to the state's water quality standards.

Well Information Management System (WIMS)

WIMS contains information on location, construction and some geology for most wells constructed after October 1986 in the state. WIMS is a web-based JAVA system.

Underground Injection Control (UIC) Management System

UIC contains information on the location, compliance activities and status of Class II and Class V underground injection wells in the state. UIC is a web based .Net application.

Accomplishments

Hazardous Substance Site Locator

DNR's Hazardous Substance Site Locator allows the public to conduct web-based searches for hazardous substance investigations and cleanups within a specific community or area. Prior to development of this application, information was primarily available only through reviewing department paper files and county property records. Users now have a streamlined mapping interface with a single page view allowing them to click on a point or area to receive a site information summary, link to important departmental documents and have the option of downloading data layers to use in permitting, planning and development activities. This application provides a transparent, consistent information resource to help protect human health and safety. DNR was asked to present the application at a multi-state conference for Technology Innovation.

Missouri Geosciences Technical Resource Assessment Tool (GeoSTRAT)

GeoSTRAT is an interactive public mapping application developed to make geologic and hydrologic data readily available for public use. GeoSTRAT enables users to easily visualize and explore geospatial data using an interactive 3-D map to view data such as water wells, sinkholes, historic mine locations, caves and springs. This data can be downloaded in formats compatible with a variety of free and commercial mapping software as a valuable tool in many areas including hazard identification, environmental engineering, emergency response, and insurance purposes. The application was featured as the lead article on Geology.com.

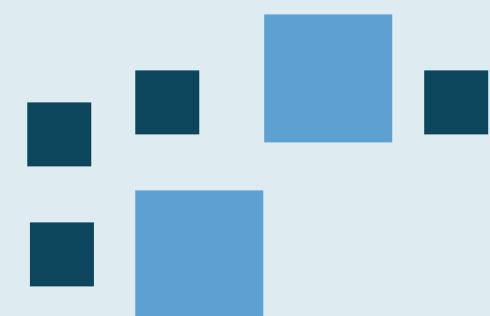
Underground Injection Control (UIC) Application

The UIC web based application allows the Missouri Geological Survey (MGS) division of DNR to manage and electronically exchange Underground Injection Control Class II and Class V well data to meet EPA reporting requirements. Prior to development, this data was managed in multiple legacy applications and data

was submitted to the EPA via paper reports. New MGS business capabilities that have been expanded through development of the UIC application include auto generation of permit numbers which previously involved manual research and effort, the ability to issue multiple permits for an individual well and the ability to track changes in well types and well statuses in a single datastore.

Water Quality Assessment (WQA) Biotic Data Exchange

Completion of the biotic dataflow thru the Water Quality Exchange (WQX) Node. WQA is a web based Java application used in part to track biological assessments of conditions of water bodies in Missouri to access their capacity to support designated aquatic life uses such as plants, fish and other aquatic species. The dataflow was initially developed by a vendor as part of a grant DNR received through the EPA. Additional enhancements to the dataflow were needed to meet EPA guidelines. After reviewing vendor proposals and associated costs to provide these enhancements, ITSD-DNR staff provided DNR with an internal solution. After completion, this solution saved DNR \$25,750.55 in grant funding when ITSD-DNR development costs were compared to the proposed vendor costs.



PUBLIC SAFETY



Projects

Environmental Geology Information Management System (EGIMS)

EGIMS is currently a MS Access database used to monitor geohydrologic evaluations of potential liquid waste and solid waste permitting sites. Information stored in this application is used by other programs within DNR for permitting purposes. This project is a redesign of the existing Access system to a fully web based Java system incorporating functionality for a public interface for applicants to submit information online rather than paper, view historical records online that previously required the applicant to call the division for a response, and the creation of a mapping interface for applicants to map out the location of their proposed projects. This project is expected to save the Department \$31,000 annually in staff time primarily through the reduction in data entry, validation of paper submissions and pre-site evaluation data gathering that will be contained in the new system.

MoCWIS Mapping Enhancement Project

MoCWIS (Missouri Clean Water Information System) is used to issue permits to facilities that discharge waste water. As such, the majority of permits are for the discharge of treated wastewater from domestic and industrial facilities. The application process is completely manual with paper based applications that require multiple steps and staff to process. Currently, staff uses a variety of GIS mapping tools to manually verify site locations for county, township and other required information and then manually enter this into MoCWIS. Mapping functionality will be extended to add a GIS editor to eliminate use of other GIS tools. Data entry and GIS validation will be reduced by 20 minutes per application. 4,500 applications are processed each year equating to over \$29,000 annually in staff time savings.

Regulatory Action Tracking System (RATS)

The current version of RATS is a MS Access database used to track departmental regulatory rule development activities. The application is not accessible to all department staff and the Access platform does not meet needed business requirements. The project is a redesign of the existing application to a web based Java system to meet compliance with House Bill 1135 and Senate Bill 504, to be used department wide to better communicate the impact of each rule on agency programs and minimize the steps needed to publish rulemaking activities to the web to provide information about time-sensitive opportunities for public participation.

DNR Environmental and Regulatory Master Data Management (MDM) Project

DNR's historic approach to data management has been highly compartmentalized into hundreds of separate applications with data stores ranging from complex modern enterprise data systems to Access databases, Excel spreadsheets and handwritten logs. Data cannot be easily shared internally due to the varying technologies and is highly duplicative in many cases. The cost

of maintaining legacy applications that are similar in nature and collect similar data that cannot be linked together is at the expense of investing in modern technologies. By developing an integrated, geographic-based information management system that is the backbone for core regulatory and environmental functions, the agency can streamline regulatory processes and provide enhanced services to customers as well as more easily provide appropriate environmental information to the general public.

Well Installation Online Testing

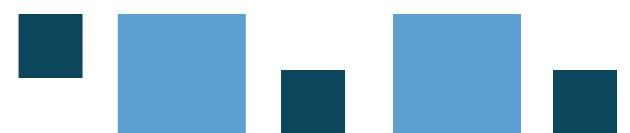
This objective of this project is to create a web based online testing mechanism for issuance of permits to industry contractor applicants for installation of water wells, monitoring wells, pump installations, test holes and heat pumps. System components include an automated application process, randomization of test questions for each exam from a test bank, electronic compilation of test data, real time pass/fail grading and online payment. Currently, applicants must submit a paper application along with payment to take the paper based exam at the DNR Missouri Geological Survey location in Rolla. The exam is offered once a month at this location and exams are hand graded by DNR staff. Benefits of this project include the reduction of staff time to proctor, grade and review paper based exams and governmental efficiency by reducing the time and expense of applicants to travel to the location.

Drinking Water Fees into Fees Tracking System (FTS)

This project will move DNR's statutory Drinking Water (DW) fees data into the existing Java based Fees Tracking System. The current DW fees application is a mix of legacy Access applications that are difficult to maintain and by utilizing the existing FTS solution, ITSD is able to reduce its application portfolio that it is responsible for. This project will save an average of 17 hours per week for staff who currently search paper files and correct data entry errors. This equates to \$24,560 savings annually in staffing including fringe benefits.

Hazardous Waste Program eReporting

This project will create a public facing web-enabled system for submission of electronic manifest data by certain regulated Hazardous Waste Program entities. This project is mandated by House Bill 1251. Benefits include reduced staff time needed to manually enter paper based reports and the manual file transfer of information into the DNR's Fees and Tax system. This reporting option will reduce the frequency of reporting efforts from quarterly to yearly for those regulated entities submitting electronically.



The Department of Public Safety (DPS) coordinates with public and private entities to assist with crime prevention and investigation, protect against threats of terror, ensure public safety and provide emergency response, care and recovery assistance.

DPS Systems

DPS system development and maintenance is performed by ITSD-DPS programmers using the following technologies:

- Legacy Programming Technologies: COBOL, CA Gen
- Standard Programming Technologies: .NET, MS SQL

DPS maintains 67 applications in its application portfolio. Below are descriptions of DPS' most critical systems:

Alcohol Licensing & Excise Tax Collection

The Alcohol and Tobacco Control (ATC) Liquor License System tracks license information including owners, financial, legal description, violations, tax collection, keg registration, inspections, etc. ATC is an AS/400 COBOL based system and is a candidate for modernization as resources permit. This system currently tracks 24,251 active liquor licenses. During FY 2014, it was used to renew 24,438 licenses.

Alcohol Sales Excise Tax ePayments

ATC currently collects over \$34 million in excise tax revenue each year and licenses 1,070 solicitor and manufacturer licenses and 176 wholesaler licensees that report liquor shipments made and received each month. In addition, there are 970 wine direct shipper licensees who are required to file an annual excise tax report.

Computer-Aided Dispatch and Records Management System

The Missouri Capitol Police (MCP) Computer-Aided Dispatch and Records Management System (CAD/RMS) is a Visual Basic application designed to help dispatch MCP resources to the daily activities in and around the Capitol. This system is used to track approximately 40,000 calls and activities annually.

Missouri Uniform Law Enforcement System (MULES)

MSHP provides the Missouri Uniform Law Enforcement System (MULES) to nearly 10,000 criminal justice users statewide. The system processes millions of transactions each year – including driver and vehicle license checks, stolen vehicles, missing persons, probation/parole and criminal history.

State Emergency Management Agency WebEOC System

WebEOC provides situational awareness to SEMA and its partners around the state. SEMA uses this application to manage their responses to events around the state. Local agencies use this system to report their status during an event with up-to-date information. The information gathered is disseminated to agencies and organizations needed to provide support and coordination.

WebGrants System

DPS currently uses the WebGrants application to manage up to 22 separate grants. In FY13, there were over 700 awards made to 400 agencies of approximately \$30,000,000.

Accomplishments

Alcohol Sales Excise Tax ePayments

The new system allows manufacturers and wholesalers to submit their monthly logs electronically to the state. In addition, manufacturers have the option to pay their monthly excise taxes electronically.

Veteran's Benefits System

The new system allows for service officers to collect information on veterans in the State through a case management system. Service officers use the information to assist the veterans in completing VA claims forms. The information is routed to a review team before submitting to the VA for processing.

Projects

Alcohol & Tobacco Control Licensing System Modernization

Alcohol and Tobacco Control currently use an AS/400 developed system to manage all of the liquor licenses and tobacco enforcement in the State. Development of a new system will move the management of the system to a web-based system. This will allow the licensees in the State to do business with ATC electronically eliminating the need for a paper process. Processing time for applications will be reduced and collection of payments will be immediate.

Crime Victims Compensation System Modernization

The CVC program financially assists people who have sustained physical or psychological injury as a result of a violent crime by paying for reasonable medical and counseling expenses as well as lost wages if the victim was gainfully employed on the crime date. The current system is based on an AS/400 legacy system with a Microsoft Access database collecting additional information. The new system will be a web-based system allowing victims and doctors quick access to file claims and check claim status.



Peace Officer Standards and Training Modernization

The POST section within DPS is responsible for tracking peace officer licenses and continuing education credits for all law enforcement agencies. The current system, written in the mid 1990's, tracked license information. Access databases were used to track additional information not handled by the legacy system. The new web-based system will incorporate 5 Access database systems and the legacy application to track all law enforcement license information in one system.

Veteran Homes Electronic Health Records System

The Missouri Veteran's Homes currently use a paper system and varying contracts to manage their electronic health records. This includes all doctor's orders, nurse's notes, financial documentation and the resident care plans. The new system will incorporate the separate systems into a centralized system where information can be searched and easily accessible by the Veteran Home staff.

Veteran's Cemetery Database Consolidation

Currently, the five Missouri veteran's cemeteries rely on Access databases for tracking applications and approvals of veterans and their spouses and/or dependents for burial in a state cemetery. These databases will be consolidated to expand reporting capabilities and coordinated backup.

REVENUE

The mission of the Department of Revenue (DOR) is to facilitate the proper functioning of state and local government by accurately and efficiently collecting and distributing state and local revenues and to support public safety by effectively administering laws related to motor vehicle sale and registration and driver licensing. The Department accomplishes this mission by following the law; fostering innovation in its operations; developing cooperative relationships with other public and private entities; clearly communicating with the public; and treating everyone fairly and with respect.



DOR Systems

DOR system development and maintenance is performed by ITSD-DOR programmers using the following technologies:

- Legacy Programming Technologies: COBOL, IDMS
- Standard Programming Technologies: .NET, MS SQL

ITSD-DOR maintains approximately 150 applications in its application portfolio. Below are descriptions of DOR's most critical systems:

Corporate Income Tax Systems (COINS, BAMS, CAFE & Corporate MeFile)

The Corporate Income Tax System (COINS) processes all corporate income and franchise tax returns for DOR. This system accepts data received electronically from various sources, performs audit checks and alerts DOR staff as to any errors encountered. The system produces all billings, refunds, notices and adjustments for all corporations filing tax returns in the state. In the past year, more than 149,000 returns were processed. The Batch Monitoring System (BAMS) and Corporate and Franchise Entry (CAFE) are associated data entry systems. Corporate MeFile is the electronic filing system for corporate income tax.

Delinquent Revenue Collection System (CACS)

The Computer Assisted Collections System (CACS) centralizes delinquent revenue collection functions for all major taxes, including sales, use, corporate, individual and withholding taxes. This system is used by DOR to document contacts from delinquent taxpayers, set up payment plans, issue enforced collection notices, and produce garnishments. There are over 1,135,000 delinquent cases maintained in the system.

Driver Licensing Systems (MODL, MEDL & Associated AAMVA Systems)

The Missouri Driver License System (MODL) is the central driver license record keeping system that contains license issuance, withdrawal, convictions, suspensions, revocations, disqualifications, reinstatements and driver status information. The system maintains over 6,100,000 driver and non-driver license records. The Missouri Electronic Driver License System (MEDL) is the mechanism for processing driver and non-driver license applications through the DOR. There are several associated systems primarily maintained by the American Association of Motor Vehicle Administrators (AAMVA) that are required to be checked prior to issuing a driver or nondriver license.

Individual Income Tax Systems (MINITS, SpeedUp, GiddyUp, Field 1040 & Individual MeFile)

The Missouri Individual Income Tax System (MINITS) processes all individual income tax and property tax credit returns. This system merges data received from three electronic sources, performs audit checks and alerts DOR staff to errors on filed documents. This system issues notices and refunds and facilitates adjustments on all individual income tax and property tax credit returns filed. There were more than 3,100,000 returns processed through this system during the past year. SpeedUp is the data-entry system for MINITS. Field 1040 is an application used by the field offices to complete and transmit a taxpayers' Missouri individual income tax return. (DOR field offices were closed in July 2014.) Individual MeFile is the electronic filing system for individual income tax.

Motor Vehicle Systems (GRS, Marine, Titles & TRIPS)

The major motor vehicle systems include GRS, Marine, Titles and TRIPS. The General Registration System (GRS) maintains the current ownership and titling of vehicles and provides current and historical information on the registration of motor vehicles. The Marine system maintains the titling and registration of marine and watercraft vehicles and titles boats and motors by generating and distributing legal certificates of ownership. The Titles system provides information on motor vehicle titling and lienholders, prints the ownership document, and records lien information for citizens. The Title & Registration Intranet Processing System (TRIPS) is the mechanism for web-based data capture of motor vehicle registration and titling transactions from license offices. There are more than 11,000,000 records in GRS.

Sales and Use Tax System (MITS, MOST & BusEfile)

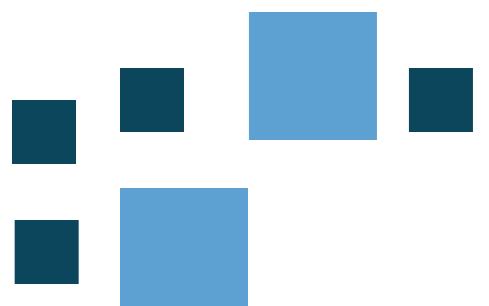
MITS is the registration system for corporations, employers and businesses required to file sales or use tax. MOST processes all sales and use tax returns filed by Missouri businesses or companies doing business in Missouri. The system processes electronic and paper returns and payments, completes audit checks on the data filed and initiates the required refunds, credits, billings and adjustments as necessary. In 2014 this system processed more than 600,000 returns.

Tax Compliance System

The Tax Compliance System (TCS) includes an Enterprise Data Warehouse (EDW), Case Audit Management System (CAMS) and WebFocus reporting. The system is used by auditors to manage cases. It is also used extensively for non-compliance identification and resolution and has generated \$412.8 million in additional revenue since its inception in 2005. Additionally, WebFocus is used to generate a wide range of reports from the EDW. The EDW is a Teradata product utilizing its own DBMS, housed in a distributed environment provided by Teradata. CAMS is a customized vendor-supported application that uses EDW as well as its own SQL database. CAMS mobile functionality allows the auditors to use all of the system while at the audit site, then sync the new and revised information back to the case stored on the network without duplication of effort.

Withholding Tax System (WITHTX)

The Withholding Tax System (WITHTX) processes all Missouri withholding tax returns. This system produces billings, notices and adjustments for businesses required to withhold and remit Missouri income tax for their employees. This system also interacts with the state accounting system to issue refunds on tax over-payments. This system processed more than 1,000,000 returns in the past year.



Accomplishments

Electronic Court Notification Enhancement

Thirty one new counties will be added to the electronic court notification project that allows DOR to send administrative judgments and garnishments to the courts electronically.

As of October, 2014, there are 56 counties participating in this program. To date, there have been 120,163 judgment documents (77,063 in calendar year 2014) and 25,620 garnishment documents (19,566 in calendar year 2014) sent electronically. The automated court filing process has realized cost savings of over \$10,000 to date, primarily in printing and postage savings. The automated process also shortens the time it takes to get administrative judgments filed to one day. The previous manual process took from four days to several weeks for document filing.

Tax Increment Financing (TIF) Annual Reporting Application

Executive Order 13-02 transferred the responsibility of collection and disbursement of municipality TIF data from DED to DOR. This application automated a manual process for municipalities to provide an annual tax credit report. The previous process required the municipalities to complete and submit a paper report. The report was then keyed into an MS Access database then reports were generated for publishing. This new public-facing application allows municipalities with TIF-supported development projects to submit required annual reporting information online. The application automatically compiles reports and makes them available for the public. Reporting functionality will also allow DOR to generate an annual report for distribution to state legislators, as required by statute. Access to reports is improved from 3 to 5 days to 1 to 2 hours. DOR anticipates a savings of 500 FTE hours per year due to the elimination of manual key entry and report creation.

Integrated Revenue System

This multi-year project for DOR to acquire and configure a commercial-off-the-shelf (COTS) system and related software tools provided by Revenue Solutions Inc. (RSI) began in 2012. DOR currently uses a combination of software systems, both mainframe and server based. The most critical of these systems were built on 30-year old technology that is increasingly difficult and expensive to use and maintain. In addition, since the various tax systems were built independently, communication between systems is limited and numerous interfaces between systems are required to allow the systems to communicate at all. The pool of personnel resources with the skills to maintain these old technologies continues to get smaller. The difficulty of timely modification of legacy systems to incorporate legislative changes and technology advancements will increase over time. The aging systems also limit DOR's ability to leverage current technology to realize processing savings or efficiency.

An up-to-date, integrated revenue system will provide a myriad of benefits for the State of Missouri. Some of the general benefits of a new system include:

- Reduced operating and maintenance costs, especially in the area of return processing
- Tools that enhance collections management, audit selection and non-filer discovery
- Increased voluntary compliance
- Faster access to taxpayer data, both by DOR users and taxpayers
- More frequent data warehouse refreshes, resulting in more accurate analysis
- Improved productivity through workflow management
- Elimination of business silos, allowing DOR to view all taxpayer activity across tax types
- Better modeling and faster implementation of tax law changes
- More reliable data, with better analytical capabilities
- Improved customer service

Release 1 was implemented in production at the end of February 2014. In the first release, an encompassing framework was established that handles the majority of the functionality for all tax types. This includes processing of returns and accounting for payments both on the taxpayer's account and in deposits to various bank accounts, registration and organization of accounts and their inter-relationships, correspondence and noticing, imaging and automated capture of data, reporting, security, interfacing with external systems like SAMII. In order to focus on the framework, the small but representative tax type of Tire and Battery Fee was implemented. This allows the project team to work through all aspects of the system without risks of high volume or large financial transactions. The project has generated enough benefits to enable DOR to pay for the entire system, more than \$125.5 million through September.

Projects

Dealer System Replacement

The current dealer system was developed by a vendor who has since gone out of business, leaving minimal support for the system. Performance and print issues exist due to the current system's reliance on printers that are reaching their end of life. The new system will include functionality to allow Missouri automobile dealers to submit applications online and renewal requests electronically.

Driver License Practice Test Mobile App

A new mobile application will allow citizens to prepare for a Missouri driver license test with mobile devices.

SOCIAL SERVICES



The Department of Social Services (DSS) works to maintain or improve the quality of life for Missouri citizens.

DSS Systems

DSS system development and maintenance is performed by ITSD-DSS programmers and contractors using the following technologies:

- Legacy Programming Technologies: COBOL, CA Gen, Mainframe DB2, IDMS
- Standard Programming Technologies: .NET, MS SQL, DB2

DSS maintains 160 applications in its application portfolio. Below are descriptions of DSS' most critical systems:

Common Client Area

The Common Client Area is a centralized repository for personal information that identifies an individual/client. Each newborn client is assigned a unique Departmental Client Number (DCN), which is used by DSS, DHSS, DMH, Missouri Juvenile Justice Information System (MOJJIS), the Electronic Benefit Transfer (EBT) and MMIS vendors. The DCN allows multiple agencies to easily track and coordinate services.

Child Support System (MACSS)

The Missouri Automated Child Support System (MACSS) is responsible for collection and disbursement of child support through enforcement of existing judicial and administrative orders, location activities, paternity establishment, establishment of orders and various other activities. Since implementation of centralized collections, this system distributes child support payments. It is an AllFusion Gen/Mainframe based system that has been customized for the State of Missouri and requires ITSD staff to ensure that the system is continually updated and in compliance with state and federal statutes and regulations as well as the Missouri Child Support Policy. Annually, MACSS is utilized to provide services to approximately 1,722,000 citizens.

Child Welfare System (FACES)

The Family and Children's Electronic System (FACES) meets the federal requirements for a State Automated Child Welfare Information System (SACWIS). FACES integrates eight separate Child Welfare applications into one seamless system that includes the Child Abuse Hotline, Children's Services, Program Eligibility, Program Authorizations, Family Centered Services, Intensive In-Home Services, Alternative Care, Child Accounting, Common Vendor, Contracts and Licensing and Children Services Payments. This system serves as a comprehensive automated case management tool that supports Children's Division staff and contracted Case Managers. FACES system development and maintenance occurs on multiple platforms. Most of the application resides on the mainframe (COBOL) platform, but some new functionality has been developed using the .NET framework on a server platform.

Over 134,000 calls are taken annually by the Child Abuse Hotline and entered into the FACES application. Also, on a monthly average, the FACES application processes over 17,595 family and 33,501 children cases.

Human Service Benefits System - Legacy (FAMIS)

The Family Assistance Management Information System (FAMIS) integrates eligibility determinations and processing for Missouri's public assistance programs into a single system. FAMIS is used to determine what programs and level of benefits citizens are eligible to receive. FAMIS manages case information for the following Family Support Division (FSD) assistance programs: Food Stamps, Temporary Assistance for Needy Families, Adult Medicaid, Family Medicaid and Child Care. FAMIS provides efficiency and reduces the burden on the FSD eligibility specialists as they only have to enter information into one system to simultaneously determine eligibility for many programs for a client.

The system reduces error rates, saves the state money and ensures public assistance recipients receive the correct benefit levels. FAMIS application development and maintenance occurs on multiple platforms. Most of the application resides on the mainframe (COBOL and Advantage) platform, but some new functionality has been developed using the .NET framework on a server platform. During September 2014, the FAMIS application processed 90,521 new applications for benefits and performed 1,313,985 different eligibility determinations.

This number represents the total number of eligibility determinations for all programs (i.e., Food Stamps, Temporary Assistance, Medicaid, etc.). Therefore, FAMIS processes approximately 44,279 determinations per day or 11,069,751 eligibility determinations per year.

Human Service Benefits System - Modern (MEDES)

The Missouri Eligibility Determination and Enrollment System (MEDES) is a modern, integrated case management system constructed from a collection of configurable, Commercial-Off-The-Shelf (COTS) products and built on a Service Oriented Architecture (SOA) platform. The system is in its first year of operation and currently processes eligibility and enrollment of Medicaid cases based on Modified Adjusted Gross Income (MAGI) criteria established by the Patient Protection and Affordable Care Act of 2010. Additional human services programs, including MO HealthNet for the Aged, Blind and Disabled, Food Stamps, Temporary Assistance, Child Care Assistance, and Low-Income Heat Energy Assistance, will be implemented within MEDES over the course of the next two years.

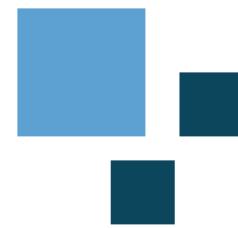
This browser-based system allows citizens to apply online, in person or by phone and provides a 21st-century user experience. It interfaces with the Federal Data Services Hub and many other state and federal systems for eligibility evidence verification and will eventually support real-time eligibility determinations and enrollment. Future releases include a financial module for Children's Health Insurance Program premiums processing, an enrollment component for Managed Care, and modules for processing Food Stamp, Temporary Assistance, Child Care Assistance, and Low-Income Heating Energy Assistance Program benefits. Additionally, an Enterprise Content Management component is being implemented to integrate management of documents and other content used as supporting evidence during the determination process. When MEDES is fully implemented the legacy FAMIS system will be decommissioned.

Medicaid Management Information Systems (MMIS)

The Department of Social Services (DSS), MO HealthNet Division (MHD) purchases and monitors health care services for low income and vulnerable citizens of the State of Missouri. The agency assures quality health care through development of service delivery systems, standards setting and enforcement, and education of providers and participants. DSS/MHD is fiscally accountable for maximum and appropriate utilization of resources.

MMIS is the State's contracted (WiPro and Xerox) mechanized claims processing and information retrieval system for Medicaid. Functions of MMIS include, but are not limited to:

- Provider Enrollment
- Claims Processing, Pricing and History
- Provider Payment
- Federal Financial and Ad Hoc Reporting
- Clinical and Pharmacy Claims Adjudication
- Prior Authorization
- Provider and Participant portals
- Provider testing environment (including testing functions for ICD10 code sets)
- Automated and manual pre-certification of Optical, DME, Radiology, and Psychology services



- Automated and manual pre-certification of inpatient services & determination of length of stay
- Automated and manual pre-certification of outpatient Radiology services performed on advanced imaging technologies
- Portal allowing providers access to Medicaid claims history and tools including e-prescription and medical possession ratio
- Personal Health Record portal for Medicaid participants
- Medication Therapy Management and Immunization Billing
- Home and Community Based Services portal and management tools

The DSS/MHD currently serves a large portion of Missouri's population and has over 8,000 enrolled providers receiving payments for their services. This level of coverage for Missouri participants resulted in the successful processing of 100,477,871 claims through the MMIS during state fiscal year 2014.

Accomplishments

Missouri Eligibility Determination and Enrollment System (MEDES)

The Missouri Eligibility Determination and Enrollment System (MEDES) made its debut on October 1, 2013 with implementation of the Citizen Portal. This allows citizens to apply for some Medicaid programs online as required by the Patient Protection and Affordable Care Act (ACA) of 2010. The subsequent implementation of the Worker Portal occurred on January 6, 2014 providing eligibility specialists with the ability to process eligibility for Medicaid programs based on Modified Adjusted Gross Income (MAGI) criteria established by the ACA.

Child Support System Enhancements

The Missouri Automated Child Support System (MACSS) was enhanced to ensure that out-of-date location information for Non-Custodial Parents (NCPs) was ended in a timely manner per established criteria, to enable additional automated enforcement actions and to automate a previous manual License Suspension process.

These changes have resulted in an increase in enforcement actions on child support orders which has resulted in a 2.4% increase in child support collections to-date. Therefore, more children are receiving the support for which they are due and there is greater potential for an increase in the amount of federal incentives FSD/CS receives.

FACES Adoption Function

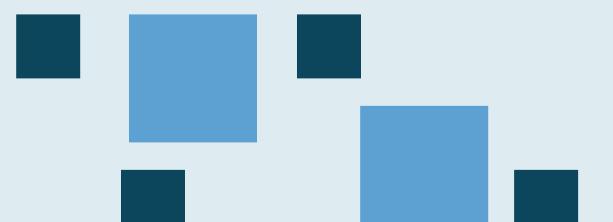
The new "Adoption Function" was implemented in the Family and Children Electronic System (FACES). This new function provides DSS staff the ability to clearly distinguish a child's adoption period from their foster care period and helps to enforce the division between the child's biological family case and the new adoptive family case. Other benefits included the automation of some financial payments that had previously been manual efforts.

FACES Enhancement Project

This effort included over 30 different system change requests from DSS case workers to improve the usability of FACES and therefore increase their productivity.

Health Information Network (HIN) Connection Project

In April 2014, DSS/MHD (MO HealthNet) implemented a connection between statewide Health Information Network (HIN) and Medicaid Management Information System (MMIS). This connection allows the MMIS to respond with Medicaid claims data to queries received from participating providers through the HIN. The data is used by physicians to improve the quality of care for Medicaid participants. In the next phase of HIN connection project, MO HealthNet plans to implement functionality that would allow MMIS users to query the statewide HIN for data related to Medicaid participants and view clinical data returned from participating providers. This functionality will improve MO HealthNet's case management and care coordination functions and automate prior authorization of services.



Projects

Missouri Eligibility Determination and Enrollment System (MEDES)

Development of MEDES will continue during 2015 to add functionality to process MO HealthNet for the Aged, Blind, and Disabled programs. Additional components, including modules for financial processing of premiums, managed care enrollment, and an Enterprise Content Management (ECM) solution, will support the core business processes handled by MEDES for various Medicaid and human services programs. The ECM solution will be integrated with the application to automate attachment of evidence and supporting documentation to the appropriate cases.

FACES Document Imaging

The implementation of the ECM solution will assist FACES case workers in all aspects of their jobs by allowing them to access documents electronically without the need to acquire physical documents. Time savings are also expected in the payment and contract processes.

FAMIS - Electronic Disqualified Recipient System (eDRS)

eDRS provides a federal centralized database for electronic submission, storage, query and retrieval of Supplemental Nutrition Assistance Program (SNAP (aka Food Stamp)) disqualification records for all 50 states and 3 territories. By law (7 CFR 272.1 & 273.16) all states and territories must use eDRS to identify SNAP applicants previously disqualified from SNAP due to intentional program violations. Therefore, the Food and Nutrition Service and the SNAP require Missouri to utilize eDRS' real time technology. The FAMIS will be enhanced to interface directly to the federal electronic Disqualification Reporting System (eDRS). This project is expected to be completed during January, 2015.

Missouri Medicaid Audit and Compliance (MMAC) Provider Enrollment and Case Management Implementation (PE CM) Project

The PE CM project will continue during 2015 through four releases of Digital Harbor software. The first release supports monthly monitoring of Medicaid Providers. State staff will receive alerts on existing Providers found to have an elevated risk based on matches against federal exclusions, state exclusions, federal death records, state licensure sanctions, National Provider Identification (NPI) deactivations, and criminal records.

The second release supports the screening of new enrolling Providers and re-enrolling Medicaid Providers. The new system will provide real time dashboards and utilize business intelligence/advanced analytics capabilities to match the enrolling Provider against over 2000 data sources to analyze, link, and score the potential risk. State staff will be able to research the findings and compare the data source findings alongside the Provider's enrollment data to make an informed decision.

The third release implements a Web portal for enrolling Providers. Providers create profiles to enable them to reuse information across Medicaid applications. Provider forms are generated dynamically based on type and scope of application. Providers can connect their application data with documents

and communications all within the portal. They can collaborate with state enrollment staff within the form in an interactive Web 2.0 social media paradigm. Providers can manage all updates, track real-time status of their applications, generate and receive electronic letters and notifications (including re-enrollments, assignment of benefits, audits, etc.) and sign and manage all agreements.

The fourth release provides MMAC with program integrity case management functionality using Digital Harbor's "Know Your Audit" software. The workflows will handle MMAC's provider audits, medical reviews, overpayment tracking, referrals to law enforcement, appeals, and more. The MMAC investigator will use the advanced intelligence tools to analyze providers, beneficiaries, and claims to support their investigations.

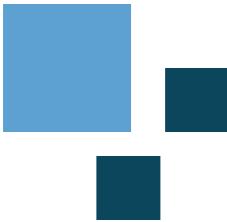
MMIS ICD-10 Implementation

Per federal mandate, the implementation date for ICD-10 was delayed from October 1, 2014 to October 1, 2015. As of October 1, 2015, all diagnosis and in-patient hospital claims with Date-of-Service or Date-of-Discharge on or after Oct 1, 2015 will be required to utilize the ICD-10 codes rather than the ICD-9 codes which are currently used. This will affect all providers submitting claims to any payer. Although the programming required to process the ICD-10 code sets was implemented on October 1, 2013, the provider community will have until October 1, 2015 to conduct testing. Missouri's MO HealthNet Division is executing an operational transition plan and working with providers to analyze, test and verify operational readiness and functionality to prevent negative impact or service interruption for Missouri's citizens.

FACES - Children's Division Mobility Application

Children's Division (CD) staff has 30 days to complete an investigation involving Child Abuse and Neglect. Each year an average of 131,040 Family Centered Services visits, 287,040 Alternative Care visits and 386,100 Investigation/Assessment are completed. During these visits, staff takes handwritten notes and completes paper forms, with each visit resulting in an average of 3.5 pieces of paper. Once a visit is complete, a worker will spend an average of two hours for each of these visits entering their handwritten information into FACES.

A mobile application will provide CD field staff the ability to complete Safety Assessments, Visitation logs, Contact Communication and Participant Characteristics using an iPad in an off-line capacity. Using this new functionality, the field staff downloads the required Call/Case information for their daily scheduled appointments from the FACES to the CD Mobile App. During their scheduled visits field staff completes either a Safety Assessment or a Visitation Log, depending on the nature of their visit. This information is then automatically uploaded into FACES during a synchronization process when the worker hits "Submit" and is within either 4G or secure Wi-Fi range. Staff will also use the calendar on the iPad while on site to schedule next visits with the client. This eliminates the need to devote their time making multiple follow up contacts with the client to find a mutually agreeable time for subsequent visits.



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